Sun™ Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide

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Contents

Preface xviii

1. CLI Overview 1

About the CLI 2

CLI Hierarchical Architecture 3

CLI Target Types 3

CLI Commands 4

CLI Command Options 4

CLI Command Targets 6

Command Properties 6

ILOM 3.0 Properties Versus ILOM 2.x Properties 7

CLI Command Syntax 8

Common CLI Command Strings 9

Executing Commands 14

- Execute Commands Individually 14
- Execute Combined Commands 14

2. Prerequisites for Using the ILOM Command-Line Interface 15

3. Logging In to and Out of ILOM 17

Before Your Initial Login 18

Logging In to ILOM 18

- Log In to ILOM Using the `root` User Account 19
- Set Up a User Account 19
- Log In to ILOM as a User 19

Recovering a Lost Password 20

- Recover a Lost Password 20

Logging Out of ILOM 21

- Log Out of ILOM 21

What Next 21

4. Configuring ILOM Communication Settings 23

Configuring Network Settings 24

Before You Begin 25

- Assign Host Name and System Identifier 25
- View and Configure Network Settings 26
- Edit Existing IP Addresses in ILOM 27
- View and Configure DNS Settings 29
- View and Configure Serial Port Settings 30
- Enable HTTP or HTTPS Web Access 31

Configuring Secure Shell Settings 33

- Establish a Secure Remote SSH Connection 33
- Enable or Disable SSH 33
- View the Current Key 34
- Generate a New SSH Key 35
- Restart the SSH Server 36

5. Managing User Accounts 37

Configuring User Accounts 39

- Configure Single Sign On 39

- Add a User Account 39
- Change a User Account Password 40
- Assign Roles to a User Account 41
- Delete a User Account 41
- View Individual User Accounts 42
- View a List of User Accounts 43
- View a List of User Sessions 43
- View an Individual User Session 44

Configuring SSH Keys 45

- Add an SSH Key 45
- Delete an SSH Key 46

Configuring Active Directory 47

- Enable Active Directory `strictcertmode` 47
- Check Active Directory `certstatus` 48
- Remove an Active Directory Certificate 49
- View and Configure Active Directory Settings 49
- Troubleshoot Active Directory Authentication and Authorization 55

Configuring Lightweight Directory Access Protocol 56

- Configure the LDAP Server 56
- Configure ILOM for LDAP 57

Configuring LDAP/SSL 58

- Enable LDAP/SSL `strictcertmode` 59
- Check LDAP/SSL `certstatus` 59
- Remove an LDAP/SSL Certificate 60
- View and Configure LDAP/SSL Settings 61
- Troubleshoot LDAP/SSL Authentication and Authorization 66

Configuring RADIUS 67

- Configure RADIUS 67

RADIUS Commands 69

6. Managing System Components 73

Viewing Component Information and Managing System Components 74

- View Component Information 74
- Prepare to Remove a Component 75
- Return a Component to Service 76
- Enable and Disable Components 76

7. Monitoring System Components 77

Monitoring System Sensors, Indicators, and ILOM Event Logs 78

- View Sensor Readings 79
- Configure System Indicators 80
- Configure Clock Settings 81
- Filter Event Log Output 82
- View and Clear the ILOM Event Log 83
- Configure Remote Syslog Receiver IP Addresses 85
- View Fault Status 86
- Collect SP Data to Diagnose System Problems 87

8. Managing System Alerts 89

Managing Alert Rule Configurations 90

Before You Begin 90

- Create or Edit Alert Rules 90
- Disable an Alert Rule 91
- Generate Test Alerts 92

CLI Commands for Managing Alert Rule Configurations 92

Configuring SMTP Client for Email Notification Alerts 94

- Enable SMTP Client 94

9. Monitoring Power Consumption 97

Monitoring the Power Consumption Interfaces 98

Before You Begin 98

- Monitor Total System Power Consumption 99
- Monitor Actual Power Consumption 100
- Monitor Individual Power Supply Consumption 100
- Monitor Available Power 101
- Monitor Hardware Configuration Maximum Power Consumption 101
- Monitor Permitted Power Consumption 101
- Configure Power Policy 102

10. Backing Up and Restoring ILOM Configuration 103

Backing Up the ILOM Configuration 104

- Back Up the ILOM Configuration 104

Restoring the ILOM Configuration 105

- Restore the ILOM Configuration 105

Edit the Backup XML file 107

- Edit the Backup XML File 107

Resetting the ILOM Configuration 110

- Reset the ILOM Configuration to Defaults 110

11. Updating ILOM Firmware 111

Updating the ILOM Firmware 112

Before You Begin 112

- Identify ILOM Firmware Version 113
- Download New Firmware on x64-Based Systems 113
- Download New Firmware on SPARC-Based Systems 114
- Update the Firmware Image 114
- Recover From a Network Failure During Firmware Update 116

Resetting ILOM SP 117

- Reset ILOM SP 117

12. Managing Remote Hosts 119

Performing the Initial Setup Tasks for Storage Redirection 120

Before You Begin 120

- Start Storage Redirection Service 121
- Download and Install the Storage Redirection Client 124

Launching the Storage Redirection CLI to Redirect Storage Devices 125

Before You Begin 125

- Launch Storage Redirection CLI Using a Command Window or Terminal 126
- Verify the Storage Redirection Service Is Running 127
- Display Storage Redirection CLI Help Information 128
- Start Redirection of Storage Device 129
- View Active Storage Redirections 130
- Stop Redirection of Storage Device 130
- Change the Default Storage Redirection Network Port: 2121 131

Issuing Power State Commands 132

Diagnosing x64 Systems Hardware Issues 133

- Configure and Run Pc-Check Diagnostics 133
- Generate a Non-Maskable Interrupt 134

Diagnosing SPARC Systems Hardware Issues 136

Before You Begin 136

- Configure Diagnostics Mode 136
- Specify the Diagnostics Trigger 137
- Specify Level of Diagnostics 137
- Specify Verbosity of Diagnostics Output 138

A. CLI Command Reference 141

B. Storage Redirection Command-Line Modes, Syntax, and Usage 165

Index 169

Preface

Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide describes how to perform the required ILOM setup procedures, as well as the typical configuration procedures you might perform while accessing ILOM features and functions.

This CLI Procedures Guide is written for system administrators who are familiar with networking concepts and basic system management protocols.

Related Documentation

To fully understand the information that is presented in this guide, use this document in conjunction with the documents listed in the following table. These documents are available online at:

http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic

These documents are also available with you platform documentation set at:

http://docs.sun.com/app/docs/prod/servers

First read the ILOM 3.0 Concepts Guide to learn about ILOM's features and functionality. To set up a new system supported by ILOM, refer to the ILOM 3.0 Getting Started Guide, where you will find the procedures for connecting to the network, logging in to ILOM for the first time, and configuring a user account or directory service. Then, decide which ILOM interface you want to use to perform other ILOM tasks. You can now refer to the the appropriate ILOM 3.0 Procedures Guide for your selected interface.

The following table lists the ILOM 3.0 Documentation Collection.

Title	Content	Part Number	Format
Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide	Information that describes ILOM features and functionality	820-6410	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide	Information and procedures for network connection, logging in to ILOM for the first time, and configuring a user account or a directory service	820-5523	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide	Information and procedures for accessing ILOM functions using the ILOM web interface	820-6411	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide	Information and procedures for accessing ILOM functions using the ILOM CLI	820-6412	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide	Information and procedures for accessing ILOM functions using SNMP or IPMI management hosts	820-6413	PDF HTML

In addition to the ILOM 3.0 Documentation Collection, associated ILOM Supplement documents present ILOM features and tasks that are specific to the server platform you are using. Use the ILOM 3.0 Documentation Collection in conjunction with the ILOM Supplement that comes with your server platform.

Documentation, Support, and Training

Sun Function	URL
Documentation	http://docs.sun.com/
Support	http://www.sun.com/support/
Training	http://www.sun.com/training/

ILOM 3.0 Version Numbers

ILOM 3.0 has implemented a new version numbering scheme to help you identify which version of ILOM you are running on your system. The numbering scheme includes a five-field string, for example, `a.b.c.d.e`, where:

- `a` – Represents the major version of ILOM.
- `b` – Represents a minor version of ILOM.
- `c` – Represents the update version of ILOM.
- `d` – Represents a micro version of ILOM. Micro versions are managed per platform or group of platforms. See your platform Product Notes for details.
- `e` – Represents a nano version of ILOM. Nano versions are incremental iterations of a micro version.

For example, ILOM 3.1.2.1.a would designate:

- ILOM 3 as the major version of ILOM
- ILOM 3.1 as a minor version of ILOM 3
- ILOM 3.1.2 as the second update version of ILOM 3.1
- ILOM 3.1.2.1 as a micro version of ILOM 3.1.2
- ILOM 3.1.2.1.a as a nano version of ILOM 3.1.2.1

Product Identity Information

Product identity information enables a system to register itself and use certain automated services based on the service contract associated with its identity. You can use product identity information to uniquely identify a system. You also need to supply the product identity information to Sun when you request service for the system. Product identity consists of the following information:

- `product_name`: Name under which a product is sold. For example, "SUN FIRE X4100 M2."
- `product_part_number`: Namespace assigned by manufacturing within which the product serial number is unique. A product part number never maps to more than one product. For example, "602-3098-01."
- `product_serial_number`: Unique identity assigned to each instance of a product by manufacturing. For example, "0615AM0654A."
- `product_manufacturer`: Manufacturer of the product. For example, 'SUN MICROSYSTEMS."

TABLE P-1 describes the common product identity information used by ILOM.

TABLE P-1 Common Product Identity Information

Required Information	Target	Minimal Properties
Basic product information on server (rackmounted and blade)	/SYS	product_name product_part_number product_serial_number product_manufacturer
Basic product information on chassis monitoring module (CMM)	/CH	product_name product_part_number product_serial_number product_manufacturer
Basic chassis information on blade	/SYS/MIDPLANE	product_name product_part_number product_serial_number product_manufacturer
Location of blade within the chassis	/SYS/SLOTID	type class value
Location of chassis within a rack	/CH	rack_location

Typographic Conventions

Typeface*	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *Concept's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, type `rm` *filename*.

* The settings on your browser might differ from these settings.

Third-Party Web Sites

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`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of your document with your feedback:

Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide,
part number 820-6412-10.

CHAPTER 1

CLI Overview

Topics

Description	Links
Learn about ILOM CLI features and functionality	• "About the CLI" on page 2 • "CLI Hierarchical Architecture" on page 3 • "CLI Target Types" on page 3 • "ILOM 3.0 Properties Versus ILOM 2.x Properties" on page 7 • "CLI Command Syntax" on page 8 • "Common CLI Command Strings" on page 9 • "Executing Commands" on page 14

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• ILOM Overview	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Web Interface Overview	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• SNMP and IPMI hosts	• SNMP Overview • IPMI Overview	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at: http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

This chapter introduces the basic information you need to know before you perform procedures using the ILOM command-line interface (CLI).

About the CLI

The ILOM CLI is based on the Distributed Management Task Force specification, *Server Management Command-Line Protocol Specification, version 11.0a.8 Draft* (DMTF CLP). You can view the entire specification at the following site:

`http://www.dmtf.org/`

The DMTF CLP provides a management interface for one or more servers regardless of server state, method of access, or installed operating system.

The DMTF CLP architecture models a hierarchical namespace, a predefined tree that contains every managed object in the system. In this model, a small number of commands operate on a large namespace of targets, which can be modified by options and properties. This namespace defines the targets for each command verb.

CLI Hierarchical Architecture

CLI Target Types

The following table lists the various hierarchy methods you can use with the ILOM CLI, depending on the particular Sun server platform that you are using.

TABLE 1-1 ILOM Target Types

Target Type	Description
* /SP	The targets and properties below this target type are used for configuring the ILOM service processor (SP) and for viewing logs and consoles.
* /CMM	On blade platforms, this target type replaces /SP and is used for configuring the ILOM chassis monitoring module (CMM).
* /SYS	The targets and properties below this target type provide inventory, environmentals, and hardware management. The targets directly correspond to nomenclature for all hardware components, some of which are printed onto the physical hardware.
* /CH	On blade platforms, this target type replaces /SYS and provides inventory, environmentals, and hardware management at the chassis level. The target types directly correspond to nomenclature names for all hardware components, some of which are printed onto the the physical hardware.
* /HOST	The targets and properties below this target type are used for monitoring and managing the host operating system.

Note – Your access to some of these target types within the hierarchy depends on the Sun server platform you are using.

Service processors can access two namespaces: the /SP namespace and the overall system namespace /SYS or /HOST. In the /SP namespace, you can manage and configure the service processor. In the /SYS or /HOST namespace you can access other information for managed system hardware.

CLI Commands

The ILOM CLI supports the DMTF CLP commands listed in the following table.

Note – CLI commands are case-sensitive.

TABLE 1-2 CLI Commands

Command	Description
`cd`	Navigates the object namespace.
`create`	Sets up an object in the namespace.
`delete`	Removes an object from the namespace.
`exit`	Terminates a CLI session.
`help`	Displays Help information for commands and targets.
`load`	Transfers a file from an indicated source to an indicated target.
`dump`	Transfers a file from a target to a remote location specified by the URI.
`reset`	Resets the state of the target.
`set`	Sets target properties to the specified value.
`show`	Displays information about targets and properties.
`start`	Starts the target.
`stop`	Stops the target.
`version`	Displays the version of service processor running.

CLI Command Options

The ILOM CLI supports the following options, but note that not every command supports every option. The `help` option can be used with any command.

TABLE 1-3 CLI Options

Option Long Form	Short Form	Description
`-default`		Causes the command to perform its default functions only.
`-destination`		Specifies the destination for data.
`-display`	`-d`	Shows the data the user wants to display.
`-force`	`-f`	Specifies that the action will be performed immediately.

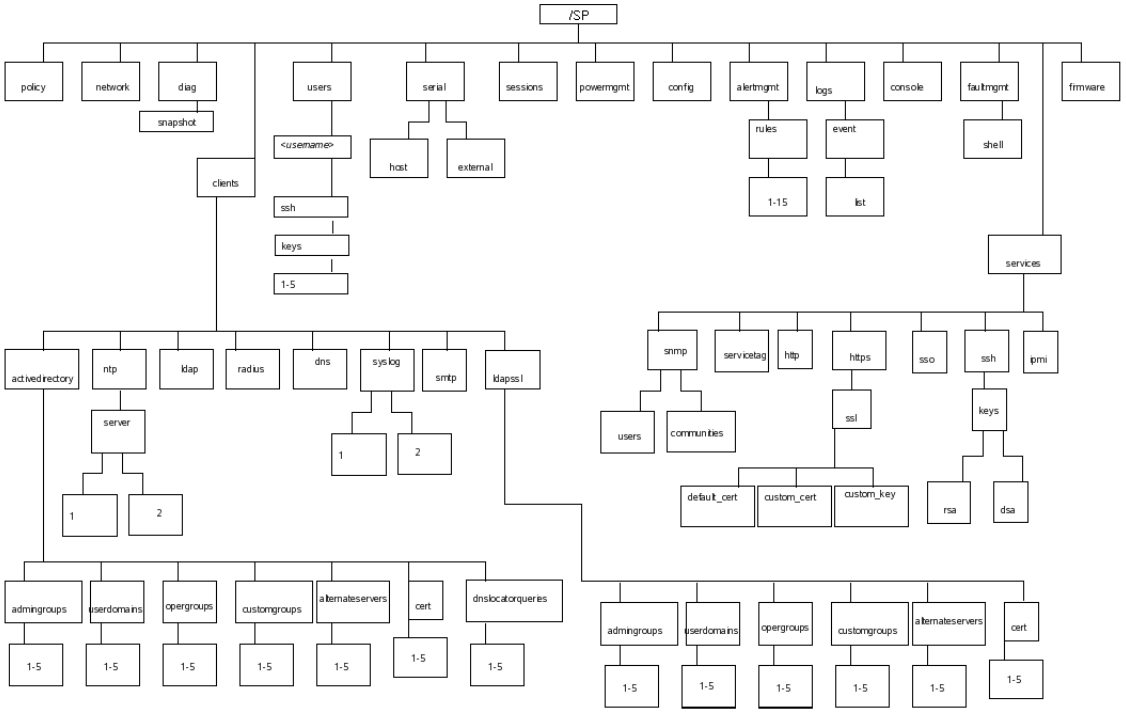
TABLE 1-3 CLI Options *(Continued)*

Option Long Form	Short Form	Description
`-help`	`-h`	Displays Help information.
`-level`	`-l`	Executes the command for the current target and all targets contained through the level specified.
`-output`	`-o`	Specifies the content and form of command output. ILOM only supports `-o table`, which displays targets and properties in tabular form.
`-script`		Skips warnings or prompts normally associated with the command.
`-source`		Indicates the location of a source image.

CLI Command Targets

Every object in your namespace is a target.

FIGURE 1-1 `/SP` Example of the ILOM CLI Target Tree



Command Properties

Properties are the configurable attributes specific to each object.

ILOM 3.0 Properties Versus ILOM 2.x Properties

If you are upgrading from ILOM 2.x to ILOM 3.0 and you want to update your 2.x scripts, you need to be familiar with the new methods that ILOM 3.0 uses to implement ILOM 3.0 commands. TABLE 1-4 lists ILOM 2.x properties and the new ILOM 3.0 implementations that replace them.

TABLE 1-4 ILOM 2.x Properties and New ILOM 3.0 Implementations

ILOM 2.x Properties	ILOM 3.0 Implementation
`/SP/clients/syslog/destination_ip1`	`/SP/clients/syslog/1/address`
`/SP/clients/syslog/destination_ip2`	`/SP/clients/syslog/2/address`
`/SP/clients/activedirectory/getcertfile` (load a certificate)	Use `load` command with this target `/SP/clients/activedirectory/cert`
`/SP/clients/activedirectory/getcertfile` (remove a certificate)	Use `set` command with `/SP/client/activedirectory/cert clear_action=true`
`/SP/clients/activedirectory/getcertfile` (restore a certificate)	No longer a feature
`/SP/clients/activedirectory/certfilestatus`	`/SP/clients/activedirectory/cert/certstatus`
`/SP/clients/activedirectory/ipaddress`	`/SP/clients/activedirectory/address`
`/SP/clients/activedirectory/alernativeservers/getcertfile` (load a certificate)	Use `load` command with `/SP/clients/activedirectory/alernativeservers/cert` as target
`/SP/clients/activedirectory/alernativeservers/getcertfile` (remove a certificate)	Use `set` command with `/SP/client/activedirectory/alernativeservers/cert clear_action=true`
`/SP/clients/activedirectory/getcertfile/alernativeservers/` (restore a certificate)	No longer a feature
`/SP/clients/activedirectory/alernativeservers/certfilestatus`	`/SP/clients/activedirectory/alernativeservers/cert/certstatus`
`/SP/clients/activedirectory/alernativeservers/ipaddress`	`/SP/clients/activedirectory/alernativeservers/address`
`/SP/clients/radius/ipaddres`	`/SP/clients/radius/address`
`/SP/clients/ldap/ipaddress`	`/SP/clients/ldap/address`
`/SP/cli/commands`	Use `help` command with a target name
`/SP/diag/state`	`/HOST/diag/state`

TABLE 1-4 ILOM 2.x Properties and New ILOM 3.0 Implementations *(Continued)*

ILOM 2.x Properties	ILOM 3.0 Implementation
/SP/diag/generate_host_nmi	/HOST/generate_host_nmi
/SP/diag/mode	/HOST/diag/mode
/SP/diag/level	/HOST/diag/level
/SP/diag/verbosity	/HOST/diag/verbosity

CLI Command Syntax

When using the ILOM CLI, information is entered in the following command syntax:
command **[***options***]** **[***target***]** **[***properties***]**

For example:

set /SP/services/https port=*portnumber* **servicestate=**enabled|disabled

---

Note – Syntax examples in this chapter use the target starting with /SP/, which could be interchanged with the target starting with /CMM/ depending on your Sun server platform. Subtargets are common across all Sun server platforms.

Common CLI Command Strings

TABLE 1-5 General Commands

Description	Command
Display information about commands and targets	**help**
Display information about a specific command	**help** <*string*>
Show all valid targets	**help targets**
Change and display the current target	**cd**
Transfer a file from a target to a remote location specified by the URI	**dump**
Log out of the CLI	**exit**
Display the version of ILOM firmware running on ILOM	**version**
Reset a target	**reset**
Display clock information	**show /SP/clock**
Display active ILOM sessions	**show /SP/sessions**
Update ILOM and BIOS firmware	**load -source** *tftp://newSPimage*
Display a list of ILOM event logs	**show /SP/logs/event/list**

TABLE 1-6 User Commands

Description	Command
Add a local user	**create /SP/users/***user1* **password=***password* **role=a|u|c|r|o|s**
Delete a local user	**delete /SP/users/***user1*
Change a local user's properties	**set /SP/users/***user1* **role=operator**
Display information about all local users	**show -display [**targets|properties|all**] -level all /SP/users**
Display information about LDAP settings	**show /SP/clients/ldap**
Change LDAP settings	**set /SP/clients/ldap binddn=***proxyuser* **bindpw=***proxyuserpassword* **defaultrole=a|u|c|r|o|s address=***ipaddress*

TABLE 1-7 Network and Serial Port Setting Commands

Description	Command
Display network configuration information	**show /SP/network**
Change network properties for ILOM. Changing certain network properties, like the IP address, will disconnect your active session	**set /SP/network pendingipaddress=***ipaddress* **pendingipdiscovery=dhcp|static pendingipgateway=***ipgateway* **pendingipnetmask=***ipnetmask* **commitpending=true**
Display information about the external serial port	**show /SP/serial/external**
Change the external serial port configuration	**set /SP/serial/external pendingspeed=***integer* **commitpending=true**
Display information about the serial connection to the host	**show /SP/serial/host**
Change the host serial port configuration. Note: This speed setting must match the speed setting for serial port 0, COM1, or /dev/ttyS0 on the host operating system	**set /SP/serial/host pendingspeed=***integer* **commitpending=true**

TABLE 1-8 Alert Management Commands

Description	Command
Display information about alerts. You can configure up to 15 alerts	**show /SP/alertmgmt/rules/1...15**
Configure an IPMI PET alert	**set /SP/alertmgmt/rules/1...15 type=ipmipet destination=***ipaddress* **level= down|critical|major|minor**
Configure a v3 SNMP trap alert	**set /SP/alertmgmt/rules/1...15 type=snmptrap snmp_version=3 comunity_or_username=***username* **destination=***ipaddress* **level= down|critical|major|minor**
Configure an email alert	**set /SP/alertmgmt/rules/1...15 type=email destination=***email_address* **level= down|critical|major|minor**

TABLE 1-9 System Management Access Commands

Description	Command
Display information about HTTP settings	**show /SP/services/http**
Change HTTP settings, such as enabling automatic redirection to HTTPS	**set /SP/services/http port=***portnumber* **secureredirect= enabled|disabled servicestate=enabled|disabled**
Display information about HTTPS access	**show /SP/services/https**
Change HTTPS settings	**set /SP/services/https port=***portnumber* **servicestate=enabled|disabled**
Display SSH DSA key settings	**show /SP/services/ssh/keys/dsa**
Display SSH RSA key settings	**show /SP/services/ssh/keys/rsa**

TABLE 1-10 Clock Settings Commands

Description	Command
Set ILOM clock to synchronize with a primary NTP server	**set /SP/clients/ntp/server/1 address=***ntpIPaddress*
Set ILOM clock to synchronize with a secondary NTP server	**set /SP/clients/ntp/server/2 address=***ntpIPaddress2*

TABLE 1-11 SNMP Commands

Description	Command
Display information about SNMP settings. By default, the SNMP port is 161 and v3 is enabled	**show /SP/services/snmp engineid=***snmpengineid* **port=***snmpportnumber* **sets=enabled|disabled v1=enabled|disabled v2c=enabled|disabled v3=enabled|disabled**
Display SNMP users	**show /SP/services/snmp/users**
Add an SNMP user	**create /SP/services/snmp/users/***snmpusername* **authenticationpassword=***password* **authenticationprotocol=MD5|SHA permissions=rw|ro privacypassword=***password* **privacyprotocol=none|DES**
Delete an SNMP user	**delete /SP/services/snmp/users/***snmpusername*
Display information about SNMP public (read-only) communities	**show /SP/services/snmp/communities/public**
Display information about SNMP private (read-write) communities	**show /SP/services/snmp/communities/private**
Add an SNMP public community	**create /SP/services/snmp/communities/ public/***comm1* **permission=ro|rw**
Add an SNMP private community	**create /SP/services/snmp/communities/ private/***comm2* **permission=ro|rw**
Delete an SNMP community	**delete /SP/services/snmp/communities/***comm1*

TABLE 1-12 Host System Commands

Description	Command
Start the host system or chassis power	**start /SYS** or **start /CH**
Stop the host system or chassis power (graceful shutdown)	**stop /SYS** or **stop /CH**
Stop the host system or chassis power (forced shutdown)	**stop [-f|force] /SYS** or **stop [-f|force] /CH**
Reset the host system or chassis	**reset /SYS** or **reset /CH**

TABLE 1-12 Host System Commands *(Continued)*

Description	Command
Start a session to connect to the host console	`start /SP/console`
Stop the session connected to the host console (graceful shutdown)	`stop /SP/console`
Stop the session connected to the host console (forced shutdown)	`stop [-f|force] /SP/console`

TABLE 1-13 Filtering Output Options for Commands

Description	Filtered Command
Display active ILOM sessions that were started on July 17th	`show /SP/sessions -level all starttime== "*Jul 17*"`
Display users that have admin roles	`show /SP/users -level all role=="a*"`
Display users that *only* have user and console roles	`show /SP/users -level all role=="uc"`
Display all SNMP trap alerts	`show /SP/alertmgmt -level all type== "snmptrap"`
Display all disabled services	`show /SP/services -level all servicestate== disabled`
Display NTP clients that use the NTP address server IP 1.2.3.4	`show /SP/clients/ntp -level all address== "1.2.3.4"`
Display all FRUs with serial number that starts with 0D01B	`show /SYS fru_serial_number=="0D01B*" -level all`
Display all memory modules manufactured by INFINEON	`show /SYS -level all type=="DIMM" fru_manufacturer=="INFINEON"`
Display all power supplies whose alarm state is major	`show /SYS -level all type=="Power Supply" alarm_status==major`
Display all components that are DIMMs or hard disks	`show /SYS type==("Hard Disk",DIMM) -level all`
Display all voltage sensors whose upper_nonrecov_threshold value is 2.89 or 60 Volts	`show /SYS type==Voltage upper_nonrecov_threshold==("2.*","60.*")`

Executing Commands

To execute most commands, specify the location of the target and then enter the command. You can perform these actions individually, or you can combine them on the same command line.

▼ Execute Commands Individually

1. **Navigate to the namespace using the** `cd` **command.**

   For example:

   ```
   cd /SP/services/http
   ```

2. **Enter the command, target, and value.**

   For example:

   ```
   set port=80
   ```

   or

   ```
   set prop1=x
   set prop2=y
   ```

▼ Execute Combined Commands

- **Using the syntax** `<command><target>=`*value*, **enter the command on a single command line.**

  For example:

  ```
  set /SP/services/http port=80
  ```

  or

  ```
  set /SP/services/http prop1=x prop2=y
  ```

CHAPTER 2

Prerequisites for Using the ILOM Command-Line Interface

Prior to performing the procedures presented in this guide, the following prerequisites must be met.

Prerequisites

Steps	Description	Related Section	Related Guide
1	You must establish initial communication with the ILOM SP (CMM or Server)	• Connecting to ILOM	*Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide* (820-5523)
2	You should have already created a user account in ILOM	• Add User Account and Assign Privileges (web interface) • Add User Account and Assign Privileges (CLI)	*Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide* (820-5523)

The ILOM 3.0 Documentation Collection is available at: http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

CHAPTER 3

Logging In to and Out of ILOM

Topics

Description	Links
Review the prerequisites	• "Before Your Initial Login" on page 18
Log in to ILOM for the first time	• "Log In to ILOM Using the `root` User Account" on page 19
Set up a user account	• "Set Up a User Account" on page 19
Log in to ILOM as a regular user	• "Log In to ILOM as a User" on page 19
Log out of ILOM	• "Log Out of ILOM" on page 21
Recover a Lost Password	• "Recover a Lost Password" on page 20

Related Topics

For ILOM	Chapter or Section	Guide
• Getting started	• ILOM Getting Started Process • Initial ILOM Setup Procedures Using the CLI	*Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide* (820-5523)
• Web interface	• Logging In to and Out of ILOM	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide.* (820-6411)

The ILOM 3.0 Documentation Collection is available at:
`http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic`.

Use this chapter as a quick reference for ILOM login and logout procedures. For additional information, refer to the initial login process and procedures in the *Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide.*

Before Your Initial Login

Prior to performing the procedures in this chapter, ensure that the following requirements are met:

- Plan how you want to set up ILOM on your server to work in your data center environment. Refer to "Initial Setup Worksheet to Establish Communication With ILOM" in the *Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide.*
- Connect to ILOM over a serial port without a network connection, or log in to ILOM over a network. To log in using a direct serial connection, attach a serial cable to the workstation, terminal, or terminal emulator and to the SER MGT port on the server or if you are using a modular chassis system, to the chassis monitoring module (CMM) port. To log in using a network connection, attach an Ethernet cable to the NET MGT port on the server or CMM. Refer to your platform documentation for more information.
- Configure the network settings. You can use either DHCP or a static network connection. By default, ILOM will attempt to obtain network settings using DHCP. Refer to "Connecting to ILOM" in the *Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide*.

Logging In to ILOM

Topics

Description	Links
Log in to ILOM and set up a user account	• "Log In to ILOM Using the `root` User Account" on page 19 • "Set Up a User Account" on page 19 • "Log In to ILOM as a User" on page 19

▼ Log In to ILOM Using the `root` User Account

To log in to the ILOM CLI for the first time, use SSH and the `root` user account.

- **To log in to the ILOM CLI using the `root` user account, type:**

```
$ ssh root@system_ipaddress
Password: changeme
```

The ILOM CLI prompt appears (->).

▼ Set Up a User Account

Once you are logged in to ILOM, you need to create a regular (non-`root`) user account. You will use this regular user account to configure ILOM settings for your system and environment.

To set up a user account, follow this step:

- **Set up a user account in one of these five classes of users:**
  - Local users
  - Active Directory users
  - LDAP users
  - LDAP/SSL users
  - RADIUS users

You can create up to 10 local user accounts or configure a directory service. For information about setting up a user account, see "Managing User Accounts" on page 37.

▼ Log In to ILOM as a User

Note – Use this procedure to log in to ILOM to verify that the user account or directory service is functioning properly.

To log in to ILOM as a user, follow these steps:

1. **Using a Secure Shell (SSH) session, log in to ILOM by specifying your user name and IP address of the server SP or CMM.**

For example:

```
$ ssh username@ipaddress
```

Or

```
$ ssh -l username ipaddress
```

The ILOM login password prompt appears.

2. **Type the user name and password for the user account.**

   <*hostname*>: *username*

   `Password:` *password*

   The ILOM CLI prompt appears (`->`).

Recovering a Lost Password

You can use the preconfigured `default` user account to recover a lost password or to re-create the `root` user account. For more information about the `root` and `default` user accounts, refer to "`root` and `default` User Accounts" in the *Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide.*

▼ Recover a Lost Password

Before You Begin

- You must be physically present at the server to perfom this procedure.

To recover a lost password, follow these steps:

1. **Log in to an ILOM serial console using the `default` user account.**

   For example:

```
SUNSP-0000000000 login: default
Press and release the physical presence button.
Press return when this is completed...
```

2. **Prove physical presence at your server.**

   Refer to your platform documentation for instructions on how to prove physical presence.

3. **Return to your serial console and press Enter.**

   You will be prompted for a password.

4. **Type the password for the `default` user account: `defaultpassword`**

Note – It is recommended that you reset your password at this time. See "Change a User Account Password" on page 40.

Logging Out of ILOM

▼ Log Out of ILOM

To log out of ILOM, follow this step:

- **At the command prompt, type:**

```
-> exit
```

What Next

After you have logged in to ILOM and set up a user account, you are now ready to configure settings for ILOM functions. The remaining chapters in the Sun ILOM 3.0 CLI Procedures Guide provide descriptions of the tasks you can perform to access ILOM functions.

CHAPTER 4

Configuring ILOM Communication Settings

Topics

Description	Links
Configure network settings	• "Assign Host Name and System Identifier" on page 25 • "View and Configure Network Settings" on page 26 • "Edit Existing IP Addresses in ILOM" on page 27 • "View and Configure DNS Settings" on page 29 • "View and Configure Serial Port Settings" on page 30 • "Enable HTTP or HTTPS Web Access" on page 31
Configure Secure Shell settings	• "Establish a Secure Remote SSH Connection" on page 33 • "Enable or Disable SSH" on page 33 • "View the Current Key" on page 34 • "Generate a New SSH Key" on page 35 • "Restart the SSH Server" on page 36

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• ILOM Network Configurations	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Getting started	• Connecting to ILOM	*Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide* (820-5523)
• Web interface	• Configuring ILOM Communication Settings	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Configuring ILOM Communication Settings	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

Configuring Network Settings

Topics

Description	Links
Review the prerequisites	• "Before You Begin" on page 25
Assign a host name and system identifier	• "Assign Host Name and System Identifier" on page 25
View and configure network settings	• "View and Configure Network Settings" on page 26
Edit existing IP Addresses	• "Edit Existing IP Addresses in ILOM" on page 27
View and configure DNS settings	• "View and Configure DNS Settings" on page 29
View and configure serial port settings	• "View and Configure Serial Port Settings" on page 30
Enable HTTP or HTTPS web access	• "Enable HTTP or HTTPS Web Access" on page 31

Before You Begin

Prior to configuring ILOM communication settings, ensure that the same IP address is always assigned to ILOM by either assigning a static IP address to ILOM after initial setup, or by configuring your DHCP server to always assign the same IP address to ILOM. This enables ILOM to be easily located on the network. By default, ILOM will attempt to obtain network settings using DHCP.

▼ Assign Host Name and System Identifier

Before You Begin

- To assign a host name and system identifier, you need the Admin (a) role enabled.

Follow these steps to assign a host name or system identifier:

1. **Log in to the ILOM CLI.**
2. **To set the SP host name and system identifier text, at the command prompt, type:**

   -> **set /SP hostname=***text_string*

   -> **set /SP system_identifier=***text_string*

   Where:

   - The host name can consist of alphanumeric characters and can include hyphens. Host names can contain up to 60 characters.
   - The system identifier can consist of a text string using any standard keyboard keys except quotation marks.

   For example:

   -> **set /SP hostname=Lab2-System1**

   -> **set /SP system_identifier=DocSystemforTesting**

   With these settings, the show command produces the following output:

```
-> show /SP
/SP
    Targets:
          alertmgmt
          .
          .
          .
          users
   Properties:
          check_physical_presence = false
          hostname = Lab2-System1
```

```
            system_contact = (none)
            system_description = SUN BLADE X8400 SERVER MODULE, ILOM
               v3.0.0.0, r31470
            system_identifier = DocSystemforTesting
            system_location = (none)
   Commands:
            cd
            reset
            set
            show
            version
```

▼ View and Configure Network Settings

Before You Begin

- To view network settings, you need the Read Only (o) role enabled. To configure network settings, you need the Admin (a) role enabled.

Follow these steps to view and configure network settings:

1. **Log in to the ILOM CLI.**
2. **At the command prompt, type:**

   –> show /SP/network

3. **Use the `set` command and type all of the settings that you wish to change.**

   You can execute these commands within a combined command. See "Execute Combined Commands" on page 14.

Note – Change a complete set of properties and commit to `true` only when the pending values are all typed into the command.

Note – Settings take effect as soon you set `commitpending=true`. Configuring network settings might disconnect your active session if you are connected to ILOM over a network. Configure all your systems before you commit the changes. After you commit the changes you will have to reconnect to ILOM.

Example

To change multiple network settings from DHCP to static assigned settings, type:

-> **set /SP/network pendingipdiscovery=static pendingipaddress=** *nnn.nn.nn.nn* **pendingipgateway=***nnn.nn.nn.nn* **pendingipnetmask=***nnn.nn.nn.nn* **commitpending=true**

Targets, Properties, and Values

The following target, properties, and values are valid for ILOM network settings.

TABLE 4-1 ILOM Target, Properties, and Values for Network Settings

Target	Property	Value	Default
/SP/network	ipaddress ipdiscovery ipgateway ipnetmask	Read-only; values are updated by the system	
	macaddress	MAC address of ILOM	
	commitpending	true|none	none
	pendingipaddress	<*ipaddress*|none>	none
	pendingipdiscovery	dhcp|static	dhcp
	pendingipgateway	<*ipaddress*|none>	none
	pendingipnetmask	<*ipdotteddecimal*>	255.255.255.0
	dhcp_server_ip	Read-only; value is updated when the SP receives a DHCP address	
	state	enabled|disabled	none

▼ Edit Existing IP Addresses in ILOM

Before You Begin

- To edit existing IP addresses, you need the Admin (a) role enabled.

Follow these steps to edit existing IP addresses that previously have been assigned to a server SP or CMM:

1. **Log in to the ILOM CLI.**
2. **Type one of the following commands to set the SP working directory:**
   - For a rackmount standalone server: `cd /SP/network`
   - For a chassis server blade server module: `cd /SP/network`
   - For a chassis CMM: `cd /CMM/network`
3. **Type the `show` command to view the IP address assigned.**

4. Type the following commands to change the existing settings.

Command	Description and Example
`set pendingipaddress=` <*ipaddress*>	Type this command followed by the static IP address that you want to assign to the server SP or CMM.
`set pendingipnetmask=` <*ipnetmask*>	Type this command followed by the static Netmask address that you want to assign to the server SP or CMM.
`set pendingipgateway=` <*ipgateway*>	Type this command followed by the static Gateway address that you want to assign to the server SP or CMM.
`set pendingipdiscovery=` <*ipdiscovery*>	Type this command to set a static IP address on the server SP or CMM.

`set commitpending=true`	Type this command to assign the network settings specified.
	
	For example:
	`set pendingipaddress=129.144.82.26`
	`set pendingipnetmask=255.255.255.0`
	`set pendingipgateway=129.144.82.254`
	`set pendingipdiscovery=static`
	`set commitpending=true`

If you connected to ILOM through a remote SSH connection, the connection made to ILOM using the former IP address will timeout. Use the newly assigned settings to connect to ILOM.

▼ View and Configure DNS Settings

Before You Begin

- To view DNS settings, you need the Read Only (o) role enabled. To configure DNS settings, you need the Admin (a) role enabled.

Follow these steps to view and configure DNS settings:

1. **Log in to the ILOM CLI.**
2. **At the command prompt type the following command to display settings for the external serial port:**

   -> **cd /SP/clients/dns**
3. **Use the** `set` **command to change properties and values for DNS settings. At the command prompt type:**

   -> **set /SP/clients/dns [propertyname=***value***]**

   For example:

   -> **set /SP/clients/dns searchpath=**`abcdefg.com`

Targets, Properties, and Values

The following targets, properties, and values are valid for DNS settings.

TABLE 4-2 Valid Targets, Properties, and Values for DNS Settings

Target	Property	Value	Default
/SP/clients/dns	auto_dns	enabled|disabled	disabled
	nameserver	*ip_address*	
	retries	Integer between 0 and 5	
	searchpath	Integer between 1 and 10	
	timeout	Up to six comma-separated search suffixes	

▼ View and Configure Serial Port Settings

Before You Begin

- To view serial port settings, you need the Read Only (o) role enabled. To configure serial port settings, you need the Admin (a) role enabled.

Follow these steps to view and configure serial port settings:

1. **Log in to the ILOM CLI.**
2. **At the command prompt:**
   - Type the following command to display settings for the external serial port:

     -> **show /SP/serial/external**
   - Type the following command to display settings for the host serial port:

     -> **show /SP/serial/host**
3. **Use the** `set` **command to change properties and values for serial port settings. Port settings have two sets of properties: pending and active. At the command prompt type:**

   -> **set** *target* **[propertyname=***value***] commitpending=true**

Example

To change the speed (baud rate) for the host serial port from 9600 to 57600, type the following:

- For x64-based systems

  -> **set /SP/serial/host pendingspeed=57600 commitpending=true**
- For SPARC-based systems

  -> **set /SP/serial/external pendingspeed=57600 commitpending=true**

Note – On x64-based systems, the speed of the host serial port must match the speed setting for serial port 0, COM1, or /dev/ttys0 on the host operating system for ILOM to communicate properly with the host.

Targets, Properties, and Values

The following targets, properties, and values are valid for ILOM serial port settings.

TABLE 4-3 Valid Targets, Properties, and Values for ILOM Serial Port Settings

Target	Property	Value	Default
/SP/serial/external	commitpending	true|(none)	(none)
	flowcontrol	software	software
	pendingspeed	*<integer>*	9600
	speed	Read-only value; configured via the pendingspeed property	
/SP/serial/host	commitpending	true|(none)	(none)
	pendingspeed	*<integer>*	(none)
	speed	Read-only value; configured via the pendingspeed property	

▼ Enable HTTP or HTTPS Web Access

ILOM supports both HTTP and HTTPS connections. ILOM enables you to automatically redirect HTTP access to HTTPS. ILOM also enables you to set the HTTP and HTTPS ports.

Before You Begin

- To modify HTTP or HTTPS access, you need the Admin (a) role enabled.

Follow these steps to modify web access:

1. **Log in to the ILOM CLI.**
2. **At the command prompt, type:**

   -> set /SP/services/http [propertyname=*value***]**

   The properties are located in /SP/services/http and /SP/services/https.

Targets, Properties, and Values

TABLE 4-4 shows the valid targets, properties, and values for HTTP and HTTPS connections.

TABLE 4-4 Valid Targets, Properties, and Values for HTTP and HTTPS Connections

Target	Property	Value	Default
/SP/services/http	secureredirect	enabled| disabled	enabled
	servicestate	enabled| disabled	disabled
	port	<*portnum*>	80
/SP/services/https	servicestate	enabled| disabled	enabled
	port	<*portnum*>	443

TABLE 4-5 lists the possible settings for HTTP, HTTPS, and automatic redirect.

TABLE 4-5 Possible Settings for HTTP, HTTPS, and Automatic Redirect

Desired State	Target	Property	Value
Enable HTTP only	/SP/services/http	secureredirect	disabled
	/SP/services/http	servicestate	enabled
	/SP/services/https	servicestate	disabled
Enable HTTP and HTTPS	/SP/services/http	secureredirect	disabled
	/SP/services/http	servicestate	enabled
	/SP/services/https	servicestate	enabled
Enable HTTPS only	/SP/services/http	secureredirect	disabled
	/SP/services/http	servicestate	disabled
	/SP/services/https	servicestate	enabled
Automatically redirect HTTP to HTTPS	/SP/services/http	secureredirect	enabled
	/SP/services/http	servicestate	disabled
	/SP/services/https	servicestate	enabled

Configuring Secure Shell Settings

Topics

Description	Links
Configure Secure Shell settings	• "Establish a Secure Remote SSH Connection" on page 33 • "Enable or Disable SSH" on page 33 • "View the Current Key" on page 34 • "Generate a New SSH Key" on page 35 • "Restart the SSH Server" on page 36

▼ Establish a Secure Remote SSH Connection

- **You will need to establish a secure connection from a remote SSH client to the server SP. To establish a secure connection, type the following:**

  ```
  $ ssh -l username server_ipaddress
  Password: ********
  ```

  The default CLI prompt appears and the system is ready for you to run the CLI commands to establish network settings.

▼ Enable or Disable SSH

Before You Begin

- To restart the Secure Shell, you need the Admin (a) role enabled.

Follow these steps to enable or disable SSH:

1. **Log in to the ILOM CLI.**
2. **If you do not want to provide access over the network, or if you do not want to use SSH, type the following:**

   ```
   -> set /SP/services/ssh state=enabled | disabled
   ```

▼ View the Current Key

Note – All of the properties below `/SP/services/ssh/keys/`*rsa*|*dsa* are read only. To view the key, you need the Read Only (`o`) role enabled.

Follow one of these steps to view the current key:

- **To view the RSA key, type:**

```
-> show /SP/services/ssh/keys/rsa
    For example:
/SP/services/ssh/keys/rsa
    Targets:
       Properties:
          fingerprint =
ca:c0:05:ff:b7:75:15:a0:30:df:1b:a1:76:bd:fe:e5
          length = 1024
           publickey
AAAAB3NzaC1yc2EAAAABIwAAAIEAthvlqgXbPIxN4OEvkukKupdFPr8GDaOsKGg
BESVlnny4nX8yd8JC/hrw3qDHmXIZ8JAFwoLQgjtZCbEsgpn9nNIMb6nSfu6Y1t
TtUZXSGFBZ48ROmU0SqqfR3i3bgDUR0siphlpgV6Yu0Zd1h3549wQ+RWk3vxqHQ
Ffzhv9c=
      Commands:
          cd
          show
```

- **To view the DSA key, type:**

```
-> show /SP/services/ssh/keys/dsa
For example:
 /SP/services/ssh/keys/dsa
     Targets:

     Properties:
        fingerprint =
6a:90:c7:37:89:e6:73:23:45:ff:d6:8e:e7:57:2a:60
        length = 1024
        publickey =
AAAAB3NzaC1kc3MAAACBAInrYecNH86imBbUqE+3FoUfm/fei2ZZtQzqrMx5zBm
bHFIaFdRQKeoQ7gqjc9jQbO7ajLxwk2vZzkg3ntnmqHz/hwHvdho2KaolBtAFGc
fLIdzGVxi4I3phVb6anmTlbqI2AILAa7JvQ8dEGbyATYR9A/pf5VTac/TQ70O/J
AAAAFQCIUavkex7wtEhC0CH3s25ON0I3CwAAAIBNfHUop6ZN7i46ZuQOKhD7Mkj
gdHy+8MTBkupVfXqfRE9Zw9yrBZCNsoD8XEeIeyP+puO5k5dJvkzqSqrTVoAXyY
qewyZMFE7stutugw/XEmyjq+XqBWaiOAQskdiMVnHa3MSg8PKJyWP8eIMxD3rIu
PTzkV632uBxzwSwfAQAAAIAtA8/3odDJUprnxLgHTowc8ksGBj/wJDgPfpGGJHB
B1FDBMhSsRbwh6Z+s/gAf1f+S67HJBTUPsVSMz+czmamc1oZeOazT4+zeNG6uCl
```

```
u/5/JmJSdkguc1FcoxtBFqfO/fKjyR0ecWaU7L4kjvWoSsydHJ0pMHasEecEBEr
lg==

     Commands:
         cd
         show
```

▼ Generate a New SSH Key

Before You Begin

- To generate a new SSH key, you need the Admin (a) role enabled.

Follow these steps to generate a new SSH key:

1. **Log in to the ILOM CLI.**
2. **Set the key type by typing the following:**

   -> set /SP/services/ssh generate_new_key_type=*dsa*|*rsa*

3. **Set the action to** `true`.

   -> set /SP/services/ssh generate_new_key_action=true

   The fingerprint and key will look different. The new key will not take effect until the SSH server is restarted.

▼ Restart the SSH Server

Before You Begin

- To restart the SSH server, you need the Admin (a) role enabled.

Note – Restarting the SSH server will end any existing SSH connections.

Follow these steps to restart the SSH server:

1. **Log in to the ILOM CLI.**
2. **To restart the SSH server, type the following:**

```
-> set /SP/services/ssh restart_sshd_action=true
```

CHAPTER 5

Managing User Accounts

Topics	
Description	**Links**
Configure user accounts	• "Configure Single Sign On" on page 39 • "Add a User Account" on page 39 • "Change a User Account Password" on page 40 • "Assign Roles to a User Account" on page 41 • "Delete a User Account" on page 41 • "View Individual User Accounts" on page 42 • "View a List of User Accounts" on page 43 • "View a List of User Sessions" on page 43 • "View an Individual User Session" on page 44
Configure SSH host key	• "Add an SSH Key" on page 45 • "Delete an SSH Key" on page 46
Configure Active Directory settings	• "Enable Active Directory `strictcertmode`" on page 47 • "Check Active Directory `certstatus`" on page 48 • "Remove an Active Directory Certificate" on page 49 • "View and Configure Active Directory Settings" on page 49 • "Troubleshoot Active Directory Authentication and Authorization" on page 55

Topics *(Continued)*

Description	Links
Configure LDAP settings	• "Configure the LDAP Server" on page 56 • "Configure ILOM for LDAP" on page 57
Configure LDAP/SSL settings	• "Enable LDAP/SSL `strictcertmode`" on page 59 • "Check LDAP/SSL `certstatus`" on page 59 • "Remove an LDAP/SSL Certificate" on page 60 • "View and Configure LDAP/SSL Settings" on page 61 • "Troubleshoot LDAP/SSL Authentication and Authorization" on page 66
Configure RADIUS settings	• "Configure RADIUS" on page 67 • "RADIUS Commands" on page 69

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• User Account Management • Guidelines for Managing User Accounts	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Managing User Accounts	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide.* (820-6411)
• IPMI and SNMP hosts	• Managing User Accounts	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
`http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic`.

Note – Syntax examples in this chapter use the target starting with `/SP/`, which could be interchanged with the target starting with `/CMM/` depending on your Sun server platform. Subtargets are common across all Sun server platforms.

Configuring User Accounts

Topics	
Description	**Links**
Configure user accounts	• "Configure Single Sign On" on page 39 • "Add a User Account" on page 39 • "Assign Roles to a User Account" on page 41 • "Delete a User Account" on page 41 • "View a List of User Accounts" on page 43 • "View an Individual User Session" on page 44 • "View a List of User Sessions" on page 43 • "View an Individual User Session" on page 44

▼ Configure Single Sign On

Before You Begin

- To disable or enable Single Sign On, you need the Admin (a) role enabled.

Follow these steps to configure Single Sign On:

1. **Log in to the ILOM CLI.**
2. **To enable or disable Single Sign On, type the following command:**

```
-> set /SP/services/sso state=disabled | enabled
```

▼ Add a User Account

Before You Begin

- To add a user, you need the User Management (u) role enabled.

Follow these steps to add a user account:

1. **Log in to the ILOM CLI.**

2. **To add a local user account, type the following command:**

   –> create /SP/users/*username* **password=***password*

   For example:

```
-> create /SP/users/user5
Creating user...
Enter new password: ********
Enter new password again: ********
Created /SP/users/user5
```

Note – When adding a user account, it is unnecessary to provide a role or password property. The role will default to Read Only (o), and the CLI will prompt you to provide and confirm a password.

▼ Change a User Account Password

Before You Begin

- To change a user account password, you need the Admin (a) role enabled. To modify your own password, you need the Read Only (o) role enabled.

Follow these steps to change a user account password.

1. **Log in to the ILOM CLI.**
2. **To change a user account password, type the following command:**

   –> set /SP/users/*user* **password**

   For example:

```
-> set /SP/users/user5 password
Enter new password: ********
Enter new password again: ********
```

▼ Assign Roles to a User Account

Before You Begin

- To assign roles to a user account, you need the User Management (u) role enabled.

Follow these steps to assign a role to a user account:

1. **Log in to the ILOM CLI.**
2. **To assign roles to a user account, type the following command:**

   –> set /SP/users/<*username***> password=<***password***> role=** <*administrator* | *operator* | *a* | *u* | *c* | *r* | *o* | *s*>

   For example:

```
-> set /SP/users/user5 role=auc
Set 'role' to 'auc'-> show /SP/users/user5
/SP/users/user5
Targets:
ssh

Properties:
role = auco
password = ********

Commands:
cd
set
show
```

▼ Delete a User Account

Before You Begin

- To delete a user, you need the User Management (u) role enabled.

Follow these steps to delete a user account:

1. **Log in to the ILOM CLI.**
2. **To delete a local user account, type the following command:**

   –> delete /SP/users/*username*

   For example:

   -> **delete /SP/users/user5**

3. **When queried, type** `y` **to delete, or** `n` **to cancel.**

   For example:

```
Are you sure you want to delete /SP/users/user5 (y/n)? y

Deleted /SP/users/user5
```

▼ View Individual User Accounts

Before You Begin

- To view individual user accounts, you only need the Read Only (o) role enabled.

Follow these steps to view individual user accounts:

1. **Log in to the ILOM CLI.**
2. **To display information about one specific user account, type the following command:**

   –> show /SP/users/*username*

   For example:

```
-> show /SP/users/user1

 /SP/users/user1
    Targets:
        ssh

    Properties:
        role = aucros
        password = *****

    Commands:
        cd
        set
        show
```

▼ View a List of User Accounts

Before You Begin

- To view a list of user accounts, you only need the Read Only (o) role enabled.

Follow these steps to view a list of user accounts:

1. **Log in to the ILOM CLI.**
2. **To display information about all local user accounts, type the following command:**

   –> show /SP/users

   For example:

```
-> show /SP/users
 /SP/users
    Targets:
         user1
         user2
         user3
         user4
```

▼ View a List of User Sessions

Before You Begin

- To view a list of user sessions, you only need the Read Only (o) role enabled.

Follow these steps to view a list of user sessions:

1. **Log in to the ILOM CLI.**

2. **To display information about all local user sessions, type the following command:**

   —> show /SP/sessions

   For example:

```
-> show /SP/sessions

 /SP/sessions
    Targets:
        12 (current)

    Properties:

    Commands:
        cd
        show
```

▼ View an Individual User Session

Before You Begin

- To view an individual user session, you need the Read Only (o) role enabled.

Follow these steps to view an individual session:

1. **Log in to the ILOM CLI.**
2. **To display information about an individual user session, type the following command:**

   —> show /SP/sessions/*session_number*

   For example:

```
-> show /SP/sessions/12

 /SP/sessions/12
    Targets:

    Properties:
        username = user4
        starttime = Mon Apr  7 21:31:22 2008
        type = shell
        mode = normal

    Commands:
        cd
        show
```

Configuring SSH Keys

Topics	
Description	**Links**
Configure SSH host key	• "Add an SSH Key" on page 45 • "Delete an SSH Key" on page 46

You can use SSH keys to automate password authentication. The following procedures describe how to add and delete SSH keys.

▼ Add an SSH Key

Before You Begin

- To add an SSH key, you need the Admin (a) role enabled.

Follow these steps to add an SSH key:

1. **Log in to the ILOM CLI.**
2. **To change to the directory location of a user's SSH key, type:**

   -> **`cd /SP/users/user1/ssh/keys/1`**
3. **To add a key to the user's account, type:**

   -> **`set load_uri=`**
   *transfer_method***`://`***username:password***`@`***ipaddress_or_hostname***`/`***directorypath***`/`***filename*

   Where:

   - *transfer_method* can be tftp, ftp, sftp, scp, http, or https.
   - *username* is the name of the user account on the remote system. (*username* is required for scp, sftp, and ftp. *username* is not used for tftp, and is optional for http and https.)
   - *password* is the password for the user account on the remote system. (*password* is required for scp, sftp, and ftp. *password* is not used for tftp, and is optional for http and https.)
   - *ipaddress_or_hostname* is the IP address or the host name of the remote system.
   - *directorypath* is the location of the SSH key on the remote system.

- *filename* is the name assigned to the SSH key file.

For example:

```
-> set load_uri=scp://adminuser:userpswd@1.2.3.4/keys/sshkey_1.pub
Set 'load_uri' to 'scp://adminuser:userpswd@1.2.3.4/keys/sshkey_1.pub'
```

▼ Delete an SSH Key

Before You Begin

- To delete an SSH key, you need the Admin (a) role enabled.

Follow these steps to delete an SSH key:

1. **Log in to the ILOM CLI.**
2. **To change to the directory location of a user's SSH key, type:**

   -> **cd /SP/users/user1/ssh/keys/1**
3. **To delete a key from the user's account, type:**

   -> **set clear_action=true**

   The following confirmation prompt appears:

   ```
   Are you sure you want to clear /SP/users/user1/ssh/keys/1
   (y/n)?
   ```
4. **Type y.**

   The SSH key is deleted and the following message appears to confirm the deletion.

   ```
   Set 'clear_action' to 'true'
   ```

Configuring Active Directory

Topics

Description	Links
Configure Active Directory settings	• "Enable Active Directory `strictcertmode`" on page 47 • "Check Active Directory `certstatus`" on page 48 • "Remove an Active Directory Certificate" on page 49 • "View and Configure Active Directory Settings" on page 49 • "Troubleshoot Active Directory Authentication and Authorization" on page 55

▼ Enable Active Directory `strictcertmode`

Before You Begin

- To configure Active Directory settings, you need the User Management `(u)` role enabled.
- By default, `strictcertmode` is disabled. When this variable is disabled, the channel is secure, but limited validation of the certificate is performed. If `strictcertmode` is enabled, then the server's certificate must have already been uploaded to the server so that the certificate signatures can be validated when the server certificate is presented.
- Data is always protected, even if `strictcertmode` is disabled.
- You can use TFTP, FTP, or SCP to load a certificate.
- You can load a SSL certificate for Active Directory using the `load -source` command from anywhere on the CLI. For example:
  `-> load -source` *URI_to_SSL_certificate target*

Follow these steps to enable `strictcertmode`:

1. **Log in to the ILOM CLI.**
2. **Type the following path to access the Active Directory certificate settings:**

   `->cd /SP/clients/activedirectory/cert`

3. **To load a certificate, type the following:**

   -> set load_uri=tftp://*IP address***/***file-path***/***filename*

4. **To enable** `strictcertmode`**, type the following:**

   -> set strictcertmode=enabled

▼ Check Active Directory `certstatus`

Before You Begin

- To configure Active Directory settings, you need the User Management (`u`) role enabled.
- `certstatus` is an operational variable that should reflect the current certificate state. Neither is required to exist if `strictcertmode` is disabled. However, for the `strictcertmode` to be enabled, a certificate must be loaded.

Follow these steps to check an Active Directory certificate status:

1. **Log in to the ILOM CLI.**
2. **To check the status of the certificate, type the following:**

   -> show /SP/clients/activedirectory/cert

   For example:

```
-> show /SP/clients/activedirectory/cert
   Targets:

   Properties:
       certstatus = certificate present
       clear_action = (none)
       issuer = /DC=com/DC=sun/DC=east/DC=sales/CN=CAforActiveDirectory
       load_uri = (none)
       serial_number = 08:f3:2e:c0:8c:12:cd:bb:4e:7e:82:23:c4:0d:22:60
       subject = /DC=com/DC=sun/DC=east/DC=sales/CN=CAforActiveDirectory
       valid_from = Oct 25 22:18:26 2006 GMT
       valid_until = Oct 25 22:18:26 2011 GMT
       version = 3 (0x02)

   Commands:
       cd
       load
       reset
       set
       show
```

▼ Remove an Active Directory Certificate

Before You Begin

- To configure Active Directory settings, you need the User Management (u) role enabled.
- The Authentication Server Certificate can be removed only when `strictcertmode` is disabled.

Follow these steps to remove an Active Directory certificate:

1. **Log in to the ILOM CLI.**
2. **Type the following:**

   `-> cd /SP/clients/activedirectory/cert`
3. **To remove a certificate, type one of the following commands:**
   - **`-> set clear_action=true`**
   - -> **`reset`** <*target*>

     For example:

     -> **`reset /SP/clients/activedirectory/cert`**
4. **Confirm whether you want to remove the certificate by typing `y` or `n` in response to the on-screen query.**

   The existing certificate file that had been uploaded will be removed.

▼ View and Configure Active Directory Settings

Before You Begin

- To configure Active Directory settings, you need the User Management (u) role enabled.

Follow these steps to view and configure active directory settings:

1. **Log in to the ILOM CLI.**
2. **Use the `show` and `set` commands to view and modify properties.**
   - **To view and modify information in the `admingroups` target:**

-> show /SP/clients/activedirectory/admingroups/*n*

Where *n* can be 1 to 5.

For example:

```
-> show /SP/clients/activedirectory/admingroups/1

/SP/clients/activedirectory/admingroups/1

    Targets:

Properties: name = CN=SpSuperAdmin,OU=Groups,DC=sales,DC=
east,DC=sun,DC=com
```

Then use the `set` command to modify properties.

For example:

```
-> set /SP/clients/activedirectory/admingroups/1/ name=CN=
spSuperAdmin,OU=Groups,DC=sales,DC=sun,DC=com
Set 'name' to 'CN=spSuperAdmin,OU=Groups,DC=sales,DC=sun,DC=com'
```

- **To view and modify information in the `opergroups` target:**

  -> show /SP/clients/activedirectory/opergroups/1

  For example:

```
-> show /SP/clients/activedirectory/opergroups/1

/SP/clients/activedirectory/opergroups/1

    Targets:

Properties: name = CN=SpSuperOper,OU=Groups,DC=sales,DC=
east,DC=sun,DC=com
```

Then use the `set` command to modify properties.

For example:

```
-> set /SP/clients/activedirectory/opergroups/1 name=CN=
spSuperOper,OU=Groups,DC=sales,DC=sun,DC=com
Set 'name' to 'CN=spSuperOper,OU=Groups,DC=sales,DC=sun,DC=com'
```

- **To view and modify information in the** `customgroups` **target:**

  -> show /SP/clients/activedirectory/customgroups/1

  For example:

```
-> show /SP/clients/activedirectory/customgroups/1
/SP/clients/activedirectory/customgroups/1
    Targets:

    Properties:
        name = custom_group_1
        roles = aucro
```

  Then use the `set` command to modify properties.

  For example:

```
-> set /SP/clients/activedirectory/customgroups/1 name=CN=
spSuperCust,OU=Groups,DC=sales,DC=sun,DC=com
Set 'name' to 'CN=spSuperCust,OU=Groups,DC=sales,DC=sun,DC=com'
-> set /SP/clients/activedirectory/customgroups/1 roles=au
Set 'roles' to 'au'
```

- **To view and modify information in the** `userdomains` **target:**

  -> show /SP/clients/activedirectory/userdomains/1

  For example:

```
-> show /SP/clients/activedirectory/userdomains/1
/SP/clients/activedirectory/userdomains/1
   Targets:

   Properties:
       domain = <USERNAME>@sales.example.sun.com
```

  Then use the `set` command to modify properties.

  For example:

```
-> set /SP/clients/activedirectory/userdomains/1 domain=
<USERNAME>@sales.example.sun.com
Set 'domain' to '<username>@sales.example.sun.com'
```

Note – In the example above, <USERNAME> will be replaced with the user's login name. During authentication, the user's login name replaces <USERNAME>. Names can take the form of Fully Qualified Distinguished Name (FQDN), `domain\name` (NT), or Simple Name.

- **To view and modify information in the** `alternateservers` **target:**

  `-> show /SP/clients/activedirectory/alternateservers/1`

  For example:

```
-> show /SP/clients/activedirectory/alternateservers/1
/SP/clients/activedirectory/alternateservers/1
    Targets:
        cert

    Properties:
        address = 10.8.168.99
        port = 0
```

Note – `address` can either be the IP address or DNS (host name). If using DNS, DNS must be enabled. For more information on enabling DNS, see "View and Configure DNS Settings" on page 29.

Then use the `set` command to modify properties.

For example:

```
-> set /SP/clients/activedirectory/alternateservers/1 port=636
```

You can also use the `show` command to view the alternate server certificate information.

For example:

```
-> show /SP/clients/activedirectory/alternateservers/1/cert
 /SP/clients/activedirectory/alternateservers/1/cert
    Targets:

Properties:
        certstatus = certificate present
        clear_action = (none)
        issuer = /DC=com/DC=sun/DC=east/DC=sales/CN CAforActiveDirectory
        load_uri = (none)
        serial_number = 08:f3:2e:c0:8c:12:cd:bb:4e:7e:82:23:c4:0d:22:60
        subject = /DC=com/DC=sun/DC=east/DC=sales/CN=CAforActiveDirectory
        valid_from = Oct 25 22:18:26 2006 GMT
        valid_until = Oct 25 22:18:26 2011 GMT
        version = 3 (0x02)
```

Type the following to copy a certificate for an alternate server:

-> cd /SP/clients/activedirectory/alternateservers/1

-> set load_uri=
<tftp | ftp | scp>:[//*<username:password>*]**@//***<ipAddress | HostName>***/***<filepPath>***/***<fileName>*

The following is an example of a certificate copied using tftp:

```
-> set load_uri=tftp://10.8.172.152/sales/cert.cert
Set 'load_uri' to 'tftp://10.8.172.152/sales/cert.cert'
```

Note – The TFTP transfer method does not require a user name and password.

The following is an example of a certificate copied using tftp:

```
-> set load_uri=
ftp://sales:XpasswordX@129.148.185.50/8275_put/cert.cert
Set 'load_uri' to
'ftp://sales:XpasswordX@129.148.185.50/8275_put/cert.cert'
```

The following is an example of a certificate copied using scp:

```
> set
load_uri=
scp://sales:XpasswordX@129.148.185.50/home/dc150698/8275_put/cert
.cert
```

Type the following to remove a certificate for an alternate server:

-> cd /SP/clients/activedirectory/alternateservers/1

-> **set clear_action=true**

For example:

```
-> set clear_action=true
Are you sure you want to clear /SP/clients/activedirectory/cert
(y/n)? y
Set 'clear_action' to 'true'
```

- **To view and modify information in the** `dnslocatorqueries` **target:**

  -> show /SP/clients/activedirectory/dnslocatorqueries/1

  For example:

```
-> show /SP/clients/activedirectory/dnslocatorqueries/1
/SP/clients/activedirectory/dnslocatorqueries/1
    Targets:

    Properties:
        service = _ldap._tcp.gc._msdcs.<DOMAIN>.<PORT:3269>

    Commands:
        cd
        set
        show
```

Note – DNS and DNS Locator Mode must be enabled for DNS Locator Queries to work. For information about enabling DNS, see "View and Configure DNS Settings" on page 29.

The DNS Locator service query identifies the named DNS service. The port ID is generally part of the record, but it can be overridden by using the format <PORT:636>. Also, named services specific for the domain being authenticated can be specified by using the <DOMAIN> substitution marker.

Then use the `set` command to modify properties in the `dnslocatorqueries` target:

For example:

```
-> set /SP/clients/activedirectory/dnslocatorqueries/1 service=<string>
```

▼ Troubleshoot Active Directory Authentication and Authorization

Before You Begin

- To view authentication and authorization events, you need the Read Only (o) role enabled.

Follow these steps to diagnose authentication and authorization events:

1. **Log in to the ILOM CLI.**
2. **Type the following commands:**

```
-> cd /SP/clients/activedirectory
/SP/clients/activedirectory

-> set logdetail=trace
Set 'logdetail' to 'trace'
```

3. **Perform another authorization attempt by logging out, then logging back in to the ILOM CLI and typing the following command:**

```
-> show /SP/logs/event/list Class==(ActDir) Type==(Log) Severity==
(Trace)
```

For example:

```
-> show /SP/logs/event/list Class==(ActDir) Type==(Log)

ID      Date/Time                   Class      Type       Severity
-----   -------------------------   --------   --------   --------
26      Thu Jul 10 09:40:46 2008   ActDir     Log        minor
        (ActDir)   authentication status: auth-OK
25      Thu Jul 10 09:40:46 2008   ActDir     Log        minor
        (ActDir)   server-authenticate: auth-success idx 100/0 dns-
server 10.8.143        .231
24      Thu Jul 10 09:40:46 2008   ActDir     Log        debug
        (ActDir)    custRoles
23      Thu Jul 10 09:40:46 2008   ActDir     Log        debug
        (ActDir)    role-name administrator
```

For more information on configuring event log detail, see "View and Clear the ILOM Event Log" on page 83.

Configuring Lightweight Directory Access Protocol

Topics

Description	Links
Configure LDAP settings	• "Configure the LDAP Server" on page 56 • "Configure ILOM for LDAP" on page 57

▼ Configure the LDAP Server

Before You Begin

- To configure LDAP settings, you need the User Management (u) role enabled.

1. **Ensure that all users authenticating to ILOM have passwords stored in "crypt" format or the GNU extension to crypt, commonly referred to as "MD5 crypt."**

   ILOM only supports LDAP authentication for passwords stored in these two variations of the crypt format.

   For example:
   `userPassword: {CRYPT}ajCa2He4PJhNo`
   or
   `userPassword: {CRYPT}$1$pzKng1$du1Bf0NWBjh9t3FbUgf46.`

2. **Add object classes `posixAccount` and `shadowAccount`, and populate the required property values for this schema (RFC 2307).**

Required Property	Description
uid	User name for logging in to ILOM
uidNumber	Any unique number
gidNumber	Any unique number
userPassword	Password
homeDirectory	Any value (this property is ignored by ILOM)
loginShell	Any value (this property is ignored by ILOM)

3. **Configure the LDAP server to enable LDAP server access to ILOM user accounts.**

   Either enable your LDAP server to accept anonymous binds, or create a proxy user on your LDAP server that has read-only access to all user accounts that will authenticate through ILOM.

   See your LDAP server documentation for more details.

▼ Configure ILOM for LDAP

Before You Begin

- To configure LDAP settings, you need the User Management (`u`) role enabled.

Follow these steps to configure ILOM for LDAP:

1. **Enter the proxy user name and password. Type:**

   `-> set /SP/clients/ldap binddn="cn=proxyuser, ou=people, ou=sales, dc=sun, dc=com" bindpw`=*password*

2. **Enter the IP address of the LDAP server. Type:**

```
-> set /SP/clients/ldap address=ldapipaddress | DNS name
```

Note – If using a DNS name, DNS must be configured and functioning.

3. **Assign the port used to communicate with the LDAP server; the default port is 389. Type:**

   ```
   -> set /SP/clients/ldap port=ldapport
   ```

4. **Enter the Distinguished Name of the branch of your LDAP tree that contains users and groups. Type, for example:**

   ```
   -> set /SP/clients/ldap searchbase="ou=people, ou=sales, dc=sun, dc=com"
   ```

   This is the location in your LDAP tree that you want to search for user authentication.

5. **Set the state of the LDAP service to enabled. Type:**

   ```
   -> set /SP/clients/ldap state=enabled
   ```

6. **To verify that LDAP authentication works, log in to ILOM using an LDAP user name and password.**

Note – ILOM searches local users before LDAP users. If an LDAP user name exists as a local user, ILOM uses the local account for authentication.

Configuring LDAP/SSL

Topics	
Description	**Links**
Configure LDAP/SSL settings	• "Enable LDAP/SSL `strictcertmode`" on page 59 • "Check LDAP/SSL `certstatus`" on page 59 • "Remove an LDAP/SSL Certificate" on page 60 • "View and Configure LDAP/SSL Settings" on page 61 • "Troubleshoot LDAP/SSL Authentication and Authorization" on page 66

▼ Enable LDAP/SSL `strictcertmode`

Before You Begin

- To configure LDAP/SSL settings, you need the User Management (u) role enabled.
- By default, `strictcertmode` is disabled. When this variable is disabled, the channel is secure, but limited validation of the certificate is performed. If `strictcertmode` is enabled, then the server's certificate must have already been uploaded to the server so that the certificate signatures can be validated when the server certificate is presented.

Follow these steps to enable LDAP/SSL `strictcertmode`:

1. **Log in to the ILOM CLI.**
2. **Type the following path to access the LDAP/SSL certificate settings:**

   -> cd /SP/clients/ldapssl/cert

3. **To load a certificate, type the following:**

   -> set load_uri=tftp://*IP address***/***file-path***/***filename*

Note – You can use TFTP, FTP, or SCP to load a certificate.

---

4. **To enable `strictcertmode`, type the following:**

   -> set strictcertmode=enabled

▼ Check LDAP/SSL `certstatus`

Before You Begin

- To view LDAP/SSL certstatus, you need the Read Only (o) role enabled.
- `certstatus` is an operational variable that should reflect the current certificate state of the certificate if `strictcertmode` is disabled. However, for the `strictcertmode` to be enabled, a certificate must be loaded.

Follow these steps to check LDAP/SSL certificate status:

1. **Log in to the ILOM CLI.**

2. **To check the status of the certificate, type the following:**

   -> show /SP/clients/ldapssl/cert

   For example:

```
 -> show /SP/clients/ldapssl/cert
    Targets:

Properties:
        certstatus = certificate present
        clear_action = (none)
issuer = /C=US/O=Entrust PKI Demonstration Cerificates
        load_uri = (none)
        serial_number = 08:f23:2e:c0:8c:12:cd:bb:4e:7e:82:23:c4:0d:22:60
        subject = /C=US/O=Entrust PKI Demonstration Cerificates/OU=Entrust/Web
Connector/OU=No Liability as per http://freecerts.entrust
        valid_from = Oct 25 22:18:26 2006 GMT
        valid_until = Oct 25 22:18:26 2011 GMT
        version = 3 (0x02)
```

▼ Remove an LDAP/SSL Certificate

Before You Begin

- To configure LDAP/SSL settings, you need the User Management (u) role enabled.
- The Authentication Server Certificate can only be removed when `strictcertmode` is disabled.

Follow these steps to remove an LDAP/SSL certificate:

1. **Log in to the ILOM CLI.**
2. **Type the following:**

   -> cd /SP/clients/ldapssl/cert

3. **To remove a certificate, type the following:**

   -> set clear_action=true

4. **Confirm whether you want to remove the certificate by typing `y` or `n` in response to the on-screen query.**

   The existing certificate file that had been uploaded will be removed.

▼ View and Configure LDAP/SSL Settings

Before You Begin

- To configure LDAP/SSL settings, you need the User Management (u) role enabled.

Follow these steps to view and configure LDAP/SSL settings:

1. **Log in to the ILOM CLI.**
2. **Use the** `show` **and** `set` **commands to view and modify properties.**
   - **To view and modify information in the** `admingroups` **target:**

     -> show /SP/clients/ldapssl/admingroups/*n*

     Where *n* can be 1 to 5.

     For example:

```
-> show /SP/clients/ldapssl/admingroups/1

/SP/clients/ldapssl/admingroups/1

    Targets:

Properties: name = CN=SpSuperAdmin,OU=Groups,DC=sales,DC=
east,DC=sun,DC=com
```

     Then use the `set` command to modify properties.

     For example:

```
-> set /SP/clients/ldapssl/admingroups/1/ name=CN=
spSuperAdmin,OU=Groups,DC=sales,DC=sun,DC=com
Set 'name' to 'CN=spSuperAdmin,OU=Groups,DC=sales,DC=sun,DC=com'
```

   - **To view and modify information in the** `opergroups` **target:**

```
-> show /SP/clients/ldapssl/opergroups/1
```

For example:

```
-> show /SP/clients/ldapssl/opergroups/1

/SP/clients/ldapssl/opergroups/1

    Targets:

Properties: name = CN=SpSuperOper,OU=Groups,DC=sales,DC=
east,DC=sun,DC=com
```

Then use the `set` command to modify properties.

For example:

```
-> set /SP/clients/ldapssl/opergroups/1 name=CN=spSuperOper,OU=
Groups,DC=sales,DC=sun,DC=com
Set 'name' to 'CN=spSuperOper,OU=Groups,DC=sales,DC=sun,DC=com'
```

- **To view and modify information in the** `customgroups` **target:**

  `-> show /SP/clients/ldapssl/customgroups/1`

  For example:

```
/SP/clients/ldapssl/customgroups/1
   Targets:

   Properties:
        name = <fully qualified distinguished name only>
        roles = (none)

   Commands:
        cd
        set
        show
```

  Then use the `set` command to modify properties.

  For example:

```
-> set /SP/clients/ldapssl/customgroups/1 name=CN=
spSuperCust,OU=Groups,DC=sales,DC=sun,DC=com
Set 'name' to 'CN=spSuperCust,OU=Groups,DC=sales,DC=sun,DC=com'
-> set /SP/clients/ldapssl/customgroups/1 roles=au
Set 'roles' to 'au'
```

- **To view and modify information in the** `userdomains` **target:**

  -> show /SP/clients/ldapssl/userdomains/1

  For example:

```
/SP/clients/ldapssl/userdomains/1
   Targets:

   Properties:
       domain = uid=<USERNAME>,ou=people,dc=sun,dc=com

   Commands:
       cd
       set
       show
```

  Then use the `set` command to modify properties.

  For example:

```
-> set SP/clients/ldapssl/userdomains1 domain=uid=<USERNAME>,
ou=people,dc=sun,dc=sun
```

Note – In the example above, <USERNAME> will be replaced with the user's login name during authentication. Names can take the form of Fully Qualified Distinguished Name (FQDN).

- **To view and modify information in the** `alternateservers` **target:**

  -> show /SP/clients/ldapssl/alternateservers/1

  For example:

```
-> show /SP/clients/ldapssl/alternateservers/1
/SP/clients/activedirectory/alternateservers/1
    Targets:
        cert

    Properties:
        address = 10.8.168.99
        port = 0
```

Note – In the example above, `address` can either be the IP address or DNS name. If using DNS, DNS must be enabled. For more information on enabling DNS, see "View and Configure DNS Settings" on page 29.

Then use the `set` command to modify properties.

For example:

```
-> set /SP/clients/ldapssl/alternateservers/1 port=636
```

You can also use the `show` command to view the alternate server certificate information.

For example:

```
-> show /SP/clients/ldapssl/alternateservers/1/cert
 /SP/clients/ldapssl/alternateservers/1/cert
    Targets:

Properties:
        certstatus = certificate present
        clear_action = (none)
issuer = /C=US/O=Entrust PKI Demonstration Cerificates
        load_uri = (none)
        serial_number = 08:f23:2e:c0:8c:12:cd:bb:4e:7e:82:23:c4:0d:22:60
        subject = /C=US/O=Entrust PKI Demonstration Cerificates/OU=Entrust/Web
Connector/OU=No Liability as per http://freecerts.entrust
        valid_from = Oct 25 22:18:26 2006 GMT
        valid_until = Oct 25 22:18:26 2011 GMT
        version = 3 (0x02)
```

Type the following to copy a certificate for an alternate server:

-> set load_uri=
*<tftp | ftp | scp>***:[***<username:password>***]@//***<*ipAddress | HostName*>**/**<*filepPath*>**/**<*fileName*>

The following is an example of a certificate copied using tftp:

```
-> set load_uri=tftp://10.8.172.152/sales/cert.cert
Set 'load_uri' to 'tftp://10.8.172.152/sales/cert.cert'
```

Note – The TFTP transfer method does not require a user name and password.

The following is an example of a certificate copied using tftp:

```
-> set load_uri=
ftp://sales:XpasswordX@129.148.185.50/8275_put/cert.cert
Set 'load_uri' to
'ftp://sales:XpasswordX@129.148.185.50/8275_put/cert.cert'
```

The following is an example of a certificate copied using scp:

```
> set
load_uri=
scp://sales:XpasswordX@129.148.185.50/home/dc150698/8275_put/cert
.cert
```

Type the following to remove a certificate for an alternate server:

```
-> set clear_action=true
```

For example:

```
-> set clear_action=true
Are you sure you want to clear /SP/clients/ldapssl/cert (y/n)? y
Set 'clear_action' to 'true'
```

▼ Troubleshoot LDAP/SSL Authentication and Authorization

Before You Begin

- To view authentication and authorization events, you need the Read Only (o) role enabled.

Follow these steps to troubleshoot LDAP/SSL authentication and authorization:

1. **Log in to the ILOM CLI.**
2. **Type the following commands:**

```
-> cd /SP/clients/ldapssl
/SP/clients/ldapssl

-> set logdetail=trace
Set 'logdetail' to 'trace'
```

3. **Perform another authorization attempt by logging out, then logging back in to the ILOM CLI and typing the following:**

```
-> show /SP/logs/event/list Class==(ldapssl) Type==(Log) Severity==(Trace)
```

For example:

```
-> show /SP/logs/event/list Class==(ldapssl) Type==(Log)

ID     Date/Time                  Class     Type      Severity
-----  -------------------------  --------  --------  --------
3155   Thu Nov 13 06:21:00 2008  LdapSsl   Log       critical
       (LdapSSL)  authentication status: auth-ERROR
3154   Thu Nov 13 06:21:00 2008  LdapSsl   Log       major
      (LdapSSL)  server-authenticate: auth-error idx 0 cfg-server
10.8.xxx.xxx
3153   Thu Nov 13 06:21:00 2008  LdapSsl   Log       major
       (LdapSSL)  ServerUserAuth - Error 0, error binding user to
ActiveDirectory server
```

For more information about configuring event log detail, see "View and Clear the ILOM Event Log" on page 83.

Configuring RADIUS

Topics	
Description	**Links**
Configure RADIUS settings	• "Configure RADIUS" on page 67 • "RADIUS Commands" on page 69

▼ Configure RADIUS

Before You Begin

- To configure RADIUS settings, you need the User Management (u) role enabled.
- If you need to provide ILOM access beyond the 10 local user accounts, and after the RADIUS server has been properly configured, you can configure ILOM to use RADIUS authentication.

- Before completing this procedure, collect the appropriate information about your RADIUS environment.

Follow these steps to configure RADIUS settings:

1. **Log in to the ILOM CLI.**
2. **Navigate to** `/SP/clients/radius`**.**
   See "RADIUS Commands" on page 69.
3. **Configure the settings as described in the following table.**

Property (CLI)	Default	Description
`state`	Disabled	Enabled | Disabled Specifies whether the RADIUS client is enabled or disabled.

`defaultrole`
`a|u|c|r|s|Administrator|`
`Operator`
	Operator	Administrator | Operator | Advanced Roles
		Access role granted to all authenticated RADIUS users. This property supports the legacy roles of Administrator or Operator, or any of the individual role ID combinations of 'a', 'u', 'c', 'r', 'o' and 's'. For example, `aucros`, where `a`=Admin, `u`=User Management, `c`=Console, `r`=Reset and Host Control, and `s`=Service.

`ipaddress`	0.0.0.0	IP address or DNS name of the RADIUS server. If the DNS name is used, DNS must be configured and functional.
`port`	1812	Specifies the port number used to communicate with the RADIUS server. The default port is 1812.
`secret`	(none)	Specifies the shared secret that is used to protect sensitive data and to ensure that the client and server recognize each other.

RADIUS Commands

This section describes the RADIUS commands.

show /SP/clients/radius

To use this command, you need the Admin (a) role or Operator role enabled.

Purpose

Use this command to view the properties associated with RADIUS authentication.

Syntax

```
show /SP/clients/radius
```

Properties

- `defaultrole` – This is the role assigned to all RADIUS users: Operator.
- `address` – IP address of your RADIUS server.
- `port` – Port number used to communicate with your RADIUS server. The default port is 1812.
- `secret` – This is the shared secret used to gain access to your RADIUS server.
- `state` – This setting is enabled or disabled to allow or deny access to your RADIUS users.

Example

```
-> show /SP/clients/radius

  /SP/clients/radius
   Targets:

   Properties:
       defaultrole = Operator
       address = 129.144.36.142
       port = 1812
       secret = (none)
       state = enabled

   Commands:
       cd
       set
       show
```

set /SP/clients/radius

To use this command, you need the User Management (u) enabled.

Purpose

Use this command to configure the properties associated with RADIUS authentication on a service processor.

Syntax

`set /SP/clients/radius [defaultrole=`
`[Administrator|Operator|a|u|c|r|s] address=`*radius_server_IPaddress*
`port=`*port#* `secret=`*radius_secret* `state=[`*enabled*`|`*disabled*`]]`

Properties

- `defaultrole` – This is the role assigned to all RADIUS users: Operator.
- `address` – IP address of your RADIUS server.
- `port` – Port number used to communicate with your RADIUS server. The default port is 1812.
- `secret` – This is the shared secret used to gain access to your RADIUS server.
- `state` – This setting is enabled or disabled to allow or deny access to your RADIUS users.

Example

```
  -> set /SP/clients/radius state=enabled address=10.8.145.77
Set 'state' to 'enabled'
Set 'address' to '10.8.145.77
```

CHAPTER 6

Managing System Components

Topics

Description	Links
Manage system components	• "View Component Information" on page 74 • "Prepare to Remove a Component" on page 75 • "Return a Component to Service" on page 76 • "Enable and Disable Components" on page 76

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• About Fault Management	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Managing System Components	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Inventory and Component Management	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
`http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic`.

Note – Syntax examples in this chapter use the target starting with `/SP/`, which could be interchanged with the target starting with `/CMM/` depending on your Sun server platform. Subtargets are common across all Sun server platforms.

Viewing Component Information and Managing System Components

Topics	
Description	**Links**
Manage system components	• "Prepare to Remove a Component" on page 75 • "Return a Component to Service" on page 76 • "Enable and Disable Components" on page 76

▼ View Component Information

Before You Begin

- To view information about a system component, you need the Read Only (o) role enabled.

Follow these steps to view component information:

1. **Log in to the ILOM CLI.**
2. **At the prompt, type:**

   -> **show** *component_name* **type**

   For example:

```
-> show /SYS/MB type
    Properties:
        type = Motherboard
    Commands:
        show
```

The properties that display inventory information are listed below. The properties that you are able to view depend on the target type you use.

- fru_part_number
- fru_manufacturer
- fru_serial_number
- fru_name
- fru_description
- fru_version

- chassis_serial_number
- chassis_part_number
- product_name
- product_serial_number
- product_part_number
- customer_frudata

▼ Prepare to Remove a Component

Before You Begin

- To modify a component, you need the Reset and Host Control (r) role enabled.

Follow these steps to prepare a component for removal:

1. **Log in to the ILOM CLI.**
2. **At the ILOM command prompt, type:**

   –> set *target* **prepare_to_remove_action=true**

   For example:

```
-> set /CH/RFM0 prepare_to_remove_action=true
   Set 'prepare_to_remove_action' to 'true'
```

   After you prepare the component for removal, you can verify that it is ready to be physically removed.

3. **At the ILOM command prompt, type:**

   –> show *target* **prepare_to_remove_status**

   For example:

```
-> show /CH/RFM0 prepare_to_remove_status
    Properties:
        prepare_to_remove_status = Ready|NotReady
    Commands:
        cd
        set
        show
        start
        stop
```

   The Ready|NotReady statement in the example shows whether the device is ready to be removed.

▼ Return a Component to Service

Before You Begin

- To modify a component, you need the Reset and Host Control (r) role enabled.

Follow these steps to return a component to service:

Note – If you have already prepared a component for removal, and you wish to undo the action, you can do so remotely.

---

1. **Log in to the ILOM CLI.**
2. **At the ILOM command prompt, type:**

   –> set *target* **return_to_service_action=true**

   For example:

```
-> set /CH/RFM0 return_to_service_action=true
Set 'return_to_service_action' to 'true'
```

▼ Enable and Disable Components

Before You Begin

- To enable or disable a component, you need the Reset and Host Control (r) role enabled.

Follow these steps to enable and disable components:

1. **Log in to the ILOM CLI.**
2. **At the ILOM command prompt, type:**

   –> set <*target***> component_state=enabled|disabled**

   For example:

```
-> set /SYS/MB/CMP0/P0/C0 component_state=enabled
Set 'component_state' to 'enabled'
```

CHAPTER 7

Monitoring System Components

Topics	
Description	**Links**
View and configure LEDs and system indicators	• "View Sensor Readings" on page 79 • "Configure System Indicators" on page 80
Set the clock and timezone	• "Configure Clock Settings" on page 81
Filter, view, and clear event logs	• "Filter Event Log Output" on page 82 • "View and Clear the ILOM Event Log" on page 83
View fault status	• "Configure Remote Syslog Receiver IP Addresses" on page 85 • "View Fault Status" on page 86
Collect data for use by Sun Services personnel to diagnose system problems	• "Collect SP Data to Diagnose System Problems" on page 87

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• System Monitoring and Alert Management • Collect SP Data to Diagnose System Problems	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Monitoring System Sensors, Indicators, and ILOM Event Log • Collect SP Data to Diagnose System Problems	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Inventory and Component Management	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
`http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic`.

Monitoring System Sensors, Indicators, and ILOM Event Logs

Topics

Description	Links
View and configure LEDs and system indicators	• "View Sensor Readings" on page 79 • "Configure System Indicators" on page 80
Set the clock and timezone	• "Configure Clock Settings" on page 81
Filter, view, and clear event logs	• "Filter Event Log Output" on page 82 • "View and Clear the ILOM Event Log" on page 83 • "Configure Remote Syslog Receiver IP Addresses" on page 85
View fault status	• "View Fault Status" on page 86
Collect SP Data	• "Collect SP Data to Diagnose System Problems" on page 87

▼ View Sensor Readings

Before You Begin

- To view sensor readings, you need the Read Only (o) role enabled.

Follow these steps to view sensor readings:

1. **Log in to the ILOM CLI.**
2. **Type the following commands to navigate to the sensor target and then to view the sensor properties:**

   ->**cd** *target*

   ->**show**

   For example, on some server platforms, you can specify the following path to view a temperature reading of a server's ambient air intake:

   ->**cd /SYS/T_AMB**

   ->**show**

   The properties describing the sensor target appear. For example:

```
type = Temperature
       class = Threshold Sensor
       value = 27.000 degree C
       upper_nonrecov_threshold = 45.00 degree C
       upper_critical_threshold = 40.00 degree C
       upper_noncritical_threshold = 35.00 degree C
       lower_noncritical_threshold = 10.00 degree C
       lower_critical_threshold = 4.00 degree C
       lower_nonrecov_threshold = 0.00 degree C
       alarm_status = cleared
```

   For specific details about the type of threshold sensor targets you can access, as well as the paths to access them, consult the user documentation provided with the Sun server platform.

3. **To view a discrete sensor reading, type the following commands:**

   ->**cd** *target*
   ->**show**

   For example, on some Sun server platforms, you can determine whether a hard disk drive is present in slot 0 by specifying the following path:

   ->**cd /SYS/HDD0_PRSNT**
   ->**show**

   The properties describing the discrete sensor target appear. For example:

- Type = Entity Presence
- Class = Discrete Indicator
- Value = Present

For specific details about the type of discrete sensor targets you can access, as well as the paths to access them, consult the user documentation provided with the Sun server platform.

▼ Configure System Indicators

Before You Begin

- To configure system indicators, you need the User Management (u) role enabled.

Follow these steps to configure system indicators:

1. **Log in to the ILOM CLI.**
2. **To determine whether you can change the state of a system indicator, type the following commands:**

   ->cd /SYS or cd /CH

   ->**show**

   Targets, properties, and commands associated with the system indicator appear.

For example:

```
/SYS
   Targets:
        BIOS
        OK2RM
        SERVICE


   Properties:
        type = Host System
        chassis_name = SUN BLADE 8000 CHASSIS
        chassis_part_number = 602-3235-00
        chassis_serial_number = 00:03:BA:CD:59:6F
        chassis_manufacturer = SUN MICROSYSTEMS
        fault_state = OK
        clear_fault_action = (none)
        power_state = Off

   Commands:
        cd
        reset
        set
        show
        start
        stop
```

If the `set` command appears in the `Commands` list, you can modify the state of the system indicator.

3. **To modify the state of the system indictor, type the following command:**

   -> **`set property=`***state_name*

   For more information about which system indicators are supported on your system, and the paths for accessing them, consult the user documentation provided with the Sun server platform.

▼ Configure Clock Settings

Before You Begin

- To view and set clock settings, you need the Admin (`a`) role enabled.

Follow these steps to configure clock settings:

1. **Log in to the ILOM CLI.**

2. **To view ILOM clock settings, type:**

   ```
   ->show /SP/clock
   ```

3. **To manually set the ILOM clock settings, type:**

   ```
   -> set target property_name=value
   ```

   For example:

   ```
   -> set /SP/clock datetime=MMDDhhmmYYYY
   ```

4. **To configure the ILOM clock settings to synchronize with other systems on your network by setting an IP address of an NTP server:**

   a. **To set the IP address of an NTP server, type the following command.**

      ```
      ->set /SP/clients/ntp/server/1 address=ip_address
      ```

   b. **To enable NTP synchronization, type:**

      ```
      ->set /SP/clock usentpserver=enabled
      ```

   Consult your Sun server platform user documentation for platform-specific clock information about whether:

   - The current time in ILOM persists across reboots of the SP.
   - The current time in ILOM can be synchronized with the host at host boot time.
   - There is a real-time clock element that stores the time.

▼ Filter Event Log Output

Before You Begin

- To filter event log output, you need the Read Only (o) role enabled.

Follow these steps to filter event log output:

1. **Log in to the ILOM CLI.**

2. **At the command prompt, type the following:**

   ```
   -> show /SP/logs/event/list Class==(value) Type==(value)
   Severity==(value)
   ```

▼ View and Clear the ILOM Event Log

Before You Begin

- To view or clear the event log, you need the Admin (a) role enabled.

Follow these steps to view and clear the ILOM event log:

1. **Establish a local serial console connection or SSH connection to the server SP or CMM.**
2. **Type one of the following commands to set the working directory:**
   - For a rackmounted server SP: **`cd /SP/logs/event`**
   - For a blade server SP in chassis: **`cd /CH/BL`*n*`/SP/logs/event`**
   - For a CMM: **`cd /CMM/logs/event`**
3. **Type the following command to display the event log list:**

   ->**`show list`**

   The contents of the event log appear.

   For example:

```
ID     Date/Time                  Class      Type       Severity
-----  -------------------------  --------   --------   --------
578    Wed Jun 11 06:39:47 2008  Audit      Log        minor
      user1 : Open Session : object = /session/type : value = shell
: success
577    Wed Jun 11 06:34:53 2008  Audit      Log        minor
       user1 : Set : object =
/clients/activedirectory/userdomains/3/domain : value =
<USERNAME>@joe.customer.example.sun.com : success
576    Wed Jun 11 06:25:06 2008  Audit      Log        minor
       user1 : Open Session : object = /session/type : value = www
: success
575    Wed Jun 11 06:07:29 2008  Audit      Log        minor
      user1 : Close Session : object = /session/type : value = www
: success
574    Wed Jun 11 06:02:01 2008  Audit      Log        minor
       root : Set : object =
/clients/activedirectory/dnslocatorqueries/2/service : value =
_ldap._tcp.pc._msdcs.<DOMAIN>.<PORT:636> : success
573    Wed Jun 11 06:01:50 2008  Fault      Fault      critical
     Fault detected at time = Wed Jun 11 06:01:41 2008. The suspect
component:/CH/PS3/EXTERNAL/AC_INPUT has fault.powersupply.no_ac
with probability=100 Please consult the Sun Blade 8000 Fault
Diagnosis Document (Document ID: 85878) at http://sunsolve.sun.com
to determine the correct course of action.
```

4. **In the event log, perform any of the following tasks:**
   - **Scroll down the list to view entries** – Press any key except 'q'. The following table provides descriptions about each column appearing in the log.

Column Label	Description
Event ID	The number of the event, in sequence from number 1.
Class/Type	• Audit/ Log – Commands that result in a configuration change. Description includes user, command, command parameters, and success/fail. • IPMI/Log – Any event that is placed in the IPMI SEL is also put in the management log. • Chassis/State – For changes to the inventory and general system state. • Chassis/Action – Category for shutdown events for server module/chassis, hot insert/removal of a FRU, and Reset Parameters button pushed. • Fault/Fault – For Fault Management faults. Description gives the time fault was detected and suspect component. • Fault/Repair – For Fault Management repairs. Description gives component.
Severity	Debug, Down, Critical, Major, or Minor
Date/Time	The day and time the event occurred. If the Network Time Protocol (NTP) server is enabled to set the ILOM time, the ILOM clock will use Universal Coordinated Time (UTC).
Description	A description of the event.

5. **To dismiss the event log (stop displaying the log), press the 'q' key.**
6. **To clear entries in the event log, perform the following steps:**
   a. **Type: `set clear=true`**

      A confirmation message appears.

   b. **Type one of the following:**
      - To clear the entries, type: **`y`**.
      - To cancel clearing the log, type: **`n`**.

Note – The ILOM event log accumulates many types of events, including copies of IPMI entries. Clearing the ILOM event log will clear all entries in the log, including the IPMI entries. However, clearing the ILOM event log entries will not clear the actual entries posted directly to an IPMI log.

▼ Configure Remote Syslog Receiver IP Addresses

Before You Begin

- To configure remote syslog receiver IP addresses, you need the Admin (a) role enabled.

Follow these steps to configure remote syslog receiver IP addresses:

1. **Establish a local serial console connection or SSH connection to the server SP or CMM.**
2. **Type one of the following commands to set the working directory:**
   - For a rackmounted server SP: **`cd /SP/clients/syslog`**
   - For a blade server SP in chassis: **`cd /CH/BL`*n*`/SP/clients/syslog`**
   - For a CMM: **`cd /CMM/clients/syslog`**
3. **Type the `show` command to display the syslog properties.**

   The properties appear. For example, accessing the syslog properties for the first time on an SP would appear as follows:

```
/SP/clients/syslog/1
Targets:
Properties:
   address = 0.0.0.0

Commands:
   cd
   set
   show
```

4. **Use the `set` command to identify a destination IP address for IP 1 (and, if applicable, IP 2).**

   For example, to set an IP destination to IP address 111.222.33.4, you would type:

   `->`**`set destination_ip1=111.222.33.4`**

5. **Press Enter for the setting to take effect.**

   The results of setting the IP address appear. For example, if you set the destination IP address to 111.222.33.4, the following would appear:

   `Set 'destination_ip1' to '111.222.33.4'`

▼ View Fault Status

Before You Begin

- To view fault status, you need the Read Only (o) role enabled.

Follow these steps to view fault status:

1. **Log in to the ILOM CLI.**
2. **Depending on the Sun server platform, specify one of the following paths:**

   -> **show /SP/faultmgmt**

   or

   -> **show /CH/faultmgmt**

   In addition, the alias, `show faulty`, is a shortcut for the following ILOM CLI command string:

   ```
   -> show -o table -level all /SP/faultmgmt
   ```

   The alias produces the same output as the above command. Thus, it enables you to view all active faults in the system in a concise, tabular form. For example, it produces output similar to the folllowing:

```
-> show faulty
Target           | Property    | Value
-----------------+-------------+-------------------
/SP/faultmgmt/0  | fru         | /SYS/MB
/SP/faultmgmt/0  | timestamp   | Jan 16 12:53:00
/SP/faultmgmt/0/ | sunw-msg-id | NXGE-8000-0U
faults/0         |             |
/SP/faultmgmt/0/ | uuid        | e19f07a5-580e-4ea0-ed6a-f663aa61
faults/0         |             | 54d5
/SP/faultmgmt/0/ | timestamp   | Jan 16 12:53:00
faults/0         |             |
```

   For more information about the ILOM fault management features offered on your system, consult the user documentation provided with the Sun server platform.

▼ Collect SP Data to Diagnose System Problems

Before You Begin

- To collect SP data using the Service Snapshot utility, you need the Admin (a) role enabled.

Caution – The purpose of the ILOM Service Snapshot utility is to collect data for use by Sun Services personnel to diagnose problems. Customers should not run this utility unless requested to do so by Sun Services.

Follow these steps to run the Service Snapshot utility:

1. **Log in to the ILOM CLI.**
2. **Type the following commands:**

```
->set /SP/diag/snapshot dataset=data
->set /SP/diag/snapshot dump_uri=URI
```

Where *data* and *URI* are one of the following:

Variable	Option	Description
data	`normal`	Specifies that ILOM, operating system, and hardware information is to be collected.
	`full`	Specifies that all data is to be collected ("full" collection). **Note -** Using this option may reset the running host.
	`normal-logonly` or `full-logonly`	Specifies that only log files are to be collected.

URI	Any valid target directory location	Specifies the URI of the target directory. The URI format is as follows:
		`protocol://username:password@host/directory`
		Where protocol can be one of these transfer methods: SFTP, TFTP, or FTP.
		For example, to store the snapshot information in the directory named `data` on the host, define the *URI* as follows:
		`ftp://joe:`*mypasswd@host_ip_address*`/data`
		The directory `data` is relative to the user's login, so the directory would probably be `/home/joe/data`.

CHAPTER 8

Managing System Alerts

Topics

Description	Links
Review the prerequisites	• "Before You Begin" on page 90
Manage alert rule configurations	• "Create or Edit Alert Rules" on page 90 • "Disable an Alert Rule" on page 91
Generate test alerts to confirm alert configuration is working	• "Generate Test Alerts" on page 92
Review the CLI commands you need to use when managing alert rule configurations	• "CLI Commands for Managing Alert Rule Configurations" on page 92
Notify recipient of system alerts using email	• "Enable SMTP Client" on page 94

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• System Monitoring and Alert Management	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Managing System Alerts	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Inventory and Component Management	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
`http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic`.

Managing Alert Rule Configurations

Topics

Description	Links
Review the prerequisites	• "Before You Begin" on page 90
Configure alert configurations	• "Create or Edit Alert Rules" on page 90 • "Disable an Alert Rule" on page 91
Generate test alerts to confirm alert configuration is working	• "Generate Test Alerts" on page 92
Notify recipient of system alerts via email	• "Enable SMTP Client" on page 94

Before You Begin

- If you are defining an Email Notification alert, the outgoing email server that will be used to send the email notification must be configured in ILOM. If an outgoing email server is not configured, ILOM will not be able to successfully generate Email Notification alerts.
- If you are defining an SNMP Trap alert with the version set to SNMP v3, the SNMP user name must be defined in ILOM as an SNMP user. If the user is not defined in ILOM as an SNMP user, the receiver of the SNMP alert will be unable to decode the SNMP alert message.
- Review the CLI commands for managing alert rule configurations. See "CLI Commands for Managing Alert Rule Configurations" on page 92.

▼ Create or Edit Alert Rules

Before You Begin

- To create or edit alert rules, you need the Admin (a) role enabled.

Follow these steps to configure an alert rule:

1. **Establish a local serial console connection or SSH connection to the server SP or CMM.**
2. **Type one of the following command paths to set the working directory:**

- For a rackmounted server: **cd /SP/alertmgmt**
- For a blade server module: **cd /SP/alertmgmt**
- For a chassis CMM: **cd /CMM/alertmgmt**

3. **Type the** `show` **command to view properties associated with an alert rule.**

   For example, to view the properties associated with the first alert rule, you would type one of the following:

   - For a rackmounted server: **show /SP/alertmgmt/rules/1**
   - For a blade sever module: **show /CH/BL*n*/SP/alertmgmt/rules/1**
   - For a chassis CMM: **show /CMM/alertmgmt/CMM/rules/1**

4. **Type the** `set` **command to assign values to properties associated with an alert rule.**

   For example, to set IPMI PET as the alert type for rule 1, you would type the following command path:

   ```
   ->set /SP/alertmgmt/rules/1 type=ipmipet
   ```

Note – To enable an alert rule configuration, you must specify a value for the alert type, alert level, and alert destination. If you are defining an SNMP alert type, you can optionally define a value for authenticating the receipt of SNMP Trap alerts.

▼ Disable an Alert Rule

Before You Begin

- To disable an alert rule, you need the Admin (a) role enabled.

Follow these steps to disable an alert rule:

1. **Establish a local serial console connection or SSH connection to the server SP or CMM.**

2. **Type one of the following command paths to set the working directory:**

   - For a rackmounted server SP, type: **cd /SP/alertngnt/rules/*n***
   - For a blade server SP, type: **cd /CH/BL*n*/SP/alertmgmt/rules/*n***
   - For a chassis CMM, type: **cd /CMM/alertmgmt/CMM/rules/*n***

     Where *n* equals a specific alert rule number, which can be 1 to 15.

     [BL*n* refers to the server module (blade) slot number.]

3. **To disable the alert rule, type the following command:**

```
->set level=disable
```

▼ Generate Test Alerts

Before You Begin

- To generate test alerts, you need the Admin (a) role enabled.
- You can test each *enabled* alert rule configuration by sending a test alert.

Follow these steps to generate test alerts:

1. **Establish a local serial console connection or SSH connection to the server SP or CMM.**
2. **Type one of the following command paths to set the working directory:**
   - For a rackmounted server SP, type: **`cd /SP/alertmgmt/rules`**
   - For a blade server SP, type: **`cd /CH/BL`*n*`/SP/alertmgmt/rules`**
   - For a chassis CMM, type: **`cd /CMM/alertmgmt/CMM/rules`**
3. **Type the following command to generate a test alert for each enabled alert rule configuration:**

   ```
   ->set testalert=true
   ```

CLI Commands for Managing Alert Rule Configurations

The following table describes the CLI commands that you will need to use to manage alert rule configurations using the ILOM CLI.

TABLE 8-1 CLI Commands for Managing Alert Rule Configurations

CLI Command	Description

`show`	The `show` command enables you to display any level of the alert management command tree by specifying either the full or relative path.
	Examples:
	• To display an alert rule along with its properties using a full path, you would type the following at the command prompt:
	`-> show /SP/alertmgmt/rules/1`
	`/SP/alertmgmt/rules/1`
	`Properties:`
	`community_or_username = public`
	`destination = 129.148.185.52`
	`level = minor`
	`snmp_version = 1`
	`type = snmptrap`
	`Commands:`
	`cd`
	`set`
	`show`
	• To display a single property using the full path, you would type the following at the command prompt:
	`-> show /SP/alertmgmt/rules/1 type`
	`/SP/alertmgmt/rules/1`
	`Properties:`
	`type = snmptrap`
	`Commands:`
	`set`
	`show`
	• To specify a relative path if the current tree location is `/SP/alertmgmt/rules`, you would type the following at the command prompt:
	`-> show 1/`
	`/SP/alertmgmt/rules/1`
	`Targets:`
	`Properties:`
	`community_or_username = public`
	`destination = 129.148.185.52`
	`level = minor`
	`snmp_version = 1`
	`type = snmptrap`
	`Commands:`
	`cd`
	`set`
	`show`

TABLE 8-1 CLI Commands for Managing Alert Rule Configurations *(Continued)*

CLI Command	Description
`cd`	The `cd` command enables you to set the working directory. To set alert management as a working directory on a server SP, you would type the following command at the command prompt: **`-> cd /SP/alertmgmt`**
`set`	The `set` command enables you to set values to properties from any place in the tree. You can specify either a full or relative path for the property depending on the location of the tree. For example: • For full paths, you would type the following at the command prompt: **`-> set /SP/alertmgmt/rules/1 type=ipmipet`** • For relative path (tree location is `/SP/alertmgmt`), you would type the following command path at the command prompt: **`-> set rules/1 type=ipmipet`** • For relative path (tree location is `/SP/alertmgmt/rules/1`), you would type the following command path at the command prompt: **`-> set type=ipmipet`**

Configuring SMTP Client for Email Notification Alerts

Topics

Description	Links
Notify recipient of system alerts using email	• "Enable SMTP Client" on page 94

▼ Enable SMTP Client

Before You Begin

- To enable SMTP Clients, you need the Admin (`a`) role enabled.
- To generate configured Email Notification alerts, you must enable the ILOM client to act as an SMTP client to send the email alert messages.
- Prior to enabling the ILOM client as an SMTP client, determine the IP address and port number of the outgoing SMTP email server that will process the email notification.

Follow these steps to enable the SMTP client:

1. **Establish a local serial console connection or SSH connection to the server SP or CMM.**
2. **Type one of the following command paths to set the working directory:**
   - For a rackmounted server SP, type: **`cd /SP/clients/smtp`**
   - For a blade server SP, type: **`cd /CH/BL`*n*`/SP/clients/smtp`**
   - For a chassis CMM, type: **`cd /CMM/clients/smtp`**
3. **Type the `show` command to display the SMTP properties.**

   For example, accessing the SMTP properties for the first time on an SP would appear as follows:

```
-> show
/SP/clients/smtp
Targets
  Properties
  address = 0. 0. 0. 0
  port = 25
  state = enabled
Commands:
  cd
  set
  show
```

4. **Use the `set` command to specify an IP address for the SMTP client or to change the port or state property value.**

   For example:

   ->**`set address=222.333.44.5`**

5. **Press Enter for the change to take effect.**

   For example, if you typed `set address=222.333.44.5` the following result would appear:

   `Set 'address=222.333.44.5'`

CHAPTER 9

Monitoring Power Consumption

Topics

Description	Links
Monitor power consumption interfaces	• "Monitor Total System Power Consumption" on page 99 • "Monitor Actual Power Consumption" on page 100 • "Monitor Individual Power Supply Consumption" on page 100 • "Monitor Available Power" on page 101 • "Monitor Hardware Configuration Maximum Power Consumption" on page 101 • "Monitor Permitted Power Consumption" on page 101 • "Configure Power Policy" on page 102

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• Power Consumption Management Interfaces	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Monitoring Power Consumption	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Monitoring Power Consumption	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at: http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

Monitoring the Power Consumption Interfaces

Topics	
Description	**Links**
Monitor power consumption interfaces	• "Monitor Total System Power Consumption" on page 99 • "Monitor Actual Power Consumption" on page 100 • "Monitor Individual Power Supply Consumption" on page 100 • "Monitor Available Power" on page 101 • "Monitor Permitted Power Consumption" on page 101 • "Configure Power Policy" on page 102

This chapter describes how to use available power consumption interfaces to monitor power consumption. Terms that pertain to power consumption monitoring are defined in the section "Power Monitoring Terminology" in the *Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide.*

Note – The power consumption interfaces described in this chapter might or might not be implemented on the platform that you are using. See the platform-specific ILOM Supplement or Product Notes for implementation details. You can find the ILOM Supplement and Product Notes within the documentation set for your system.

Before You Begin

To monitor the power consumption of the system or of an individual power supply, you need the Read Only (o) role enabled.

▼ Monitor Total System Power Consumption

1. **Log in to the ILOM CLI.**
2. **Type the** `show` **command to display the total power consumption.**

   For example:

   -> **show /SYS/VPS**

   -> **show /SYS/VPS** *property*

The following table lists and describes the properties of the Total Power Consumption sensor for CLI.

Property	Value
`type`	Threshold values are platform specific. Refer to your platform documentation for details.
`class`	
`value`	
`upper_nonrecov_threshold`	
`upper_critical_threshold`	
`upper_noncritical_threshold`	
`lower_noncritical_threshold`	
`lower_critical_threshold`	
`lower_nonrecov_threshold`	

The total power consumption property `actual_power` can also be accessed by typing the following command:

-> **show /SP/powermgmt actual_power**

`actual_power` is the same as `/SYS/VPS`. `actual_power` is the value returned by the sensor.

▼ Monitor Actual Power Consumption

1. **Log in to the ILOM CLI.**
2. **Type the** `show` **command to display the actual power consumption.**

   For example:

   ```
   -> show /SP/powermgmt actual_power
   ```

▼ Monitor Individual Power Supply Consumption

1. **Log in to the ILOM CLI.**
2. **Type the** `show` **command to display the individual power supply consumption.**

   For example:

   - For CLI on rackmounted system:

   ```
   -> show /SYS/platform_path_to_powersupply/INPUT_POWER|OUTPUT_POWER
   ```

   - For CLI on CMM:

   ```
   -> show /CH/platform_path_to_powersupply/INPUT_POWER|OUTPUT_POWER
   ```

   The following table lists and describes the properties of the CLI sensors. Both sensors, INPUT_POWER and OUTPUT_POWER, have the same properties.

Property	Value
`type`	Power Unit
`class`	Threshold Sensor
`value`	<total consumed power in watts, for example "1400">
`upper_nonrecov_threshold`	N/A
`upper_critical_threshold`	N/A
`upper_noncritical_threshold`	N/A
`lower_noncritical_threshold`	N/A
`lower_critical_threshold`	N/A
`lower_nonrecov_threshold`	N/A

Note – Power sensors are not supported on server modules (blades).

▼ Monitor Available Power

1. **Log in to the ILOM CLI.**
2. **Type the** `show` **command to display the available power.**

   For example:

   - For CLI on a rackmounted system:

   -> **show /SP/powermgmt available_power**

   - For CLI on a CMM:

   -> **show /CMM/powermgmt available_power**

▼ Monitor Hardware Configuration Maximum Power Consumption

1. **Log in to the ILOM CLI.**
2. **Type the** `show` **command to display the hardware configuration maximum power consumption.**

   For example:

   -> **show /SP/powermgmt hwconfig_power**

▼ Monitor Permitted Power Consumption

1. **Log in to the ILOM CLI.**
2. **Type the** `show` **command to display the permitted power consumption.**

   For example:

   - For CLI on a rackmounted system:

   -> **show /SP/powermgmt permitted_power**

   - For CLI on a CMM:

   -> **show /CMM/powermgmt permitted_power**

▼ Configure Power Policy

Before You Begin

- To set power policy, you need the Admin (a) role enabled.
- Refer to your platform ILOM documentation for information about power policy implementation on a specific platform.

Note – The power policy described in this chapter might or might not be implemented on the platform that you are using. See the platform-specific ILOM Supplement or Product Notes for implementation details. You can find the ILOM Supplement and Product Notes within the documentation set for your system.

Follow these steps to configure power policy:

1. **Log in to the ILOM CLI.**
2. **Type the** `set` **command to set the power policy:**

   -> **`set /SP/powermgmt policy=Performance|Elastic`**
3. **Type the** `show` **command to display the power policy:**

   -> **`show /SP/powermgmt policy`**

CHAPTER 10

Backing Up and Restoring ILOM Configuration

Topics

Description	Links
Back up the ILOM configuration	• "Back Up the ILOM Configuration" on page 104
Restore the ILOM configuration	• "Restore the ILOM Configuration" on page 105
Edit the backup XML file	• "Edit the Backup XML File" on page 107
Reset ILOM configuration to default settings	• "Reset the ILOM Configuration to Defaults" on page 110

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• Configuration Management and Firmware Updates	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Backing Up and Restoring ILOM Configuration	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Managing the ILOM Configuration	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

Backing Up the ILOM Configuration

Topics

Description	Links
Back up your ILOM configuration	• "Back Up the ILOM Configuration" on page 104

▼ Back Up the ILOM Configuration

Before You Begin

- Log in to the ILOM CLI as a user assigned the Admin, User Management, Console, Reset and Host Control, and Read Only (`a,u,c,r,o`) roles. These roles are required in order to perform a complete backup of the ILOM SP configuration.
- If you use a user account that does not have the roles listed above, the configuration backup file that is created might not include all of the ILOM SP configuration data.

Follow these steps to back up the ILOM configuration:

1. **Log in to the ILOM CLI.**
2. **Change to the `/SP/config` directory. Type:**

   -> **`cd /SP/config`**
3. **If you want sensitive data, such as user passwords, SSH keys, certificates, and so forth, to be backed up, you must provide a passphrase. Type:**

   -> **`set passphrase=`***passphrase*
4. **To initiate the Backup operation, type the following command from within the `/SP/config` directory:**

   -> **`set dump_uri=`**
   *transfer_method***`://`***username:password***`@`***ipaddress_or_hostname***`/`***directorypath***`/`***filename*

   Where:

   - *transfer_method* can be tftp, ftp, sftp, scp, http, or https.
   - *username* is the name of the user account on the remote system. (*username* is required for scp, sftp, and ftp. *username* is not used for tftp, and it is optional for http and https.)

- *password* is the password for the user account on the remote system. (*password* is required for scp, sftp, and ftp. *password* is not used for tftp, and it is optional for http and https.)
- *ipaddress_or_hostname* is the IP address or the host name of the remote system.
- *directorypath* is the storage location on the remote system.
- *filename* is the name assigned to the backup file.

For example:

```
-> set dump_uri=
scp://adminuser:userpswd@1.2.3.4/Backup/Lab9/SP123.config
```

The Backup operation executes and you will be prompted when the operation completes. A Backup operation typically takes two to three minutes to complete.

Note – While the Backup operation is executing, sessions on the ILOM SP will be momentarily suspended. The sessions will resume normal operation once the Backup operation is complete.

Restoring the ILOM Configuration

Topics

Description	Links
Restore the ILOM configuration	• "Restore the ILOM Configuration" on page 105

▼ Restore the ILOM Configuration

Before You Begin

- Log in to the ILOM CLI as a user assigned the Admin, User Management, Console, Reset and Host Control, and Read Only (`a,u,c,r,o`) roles. These roles are required to perform a complete restore of the ILOM SP configuration.
- When executing a Restore operation, use a user account that has the same or more privileges than the user account that was used to create the backup file; otherwise, some of the backed up configuration data might not be restored. All configuration properties that are not restored appear in the event log. Therefore, one way to verify whether all the configuration properties were restored is to check the event log.

Follow these steps to restore the ILOM configuration:

1. **Log in to the ILOM CLI.**
2. **Change to the** `/SP/config` **directory. Type:**

   -> **`cd /SP/config`**
3. **If a passphrase was specified when the backup file was created, you must specify the same passphrase to perform the Restore operation. Type:**

   -> **`set passphrase=`***passphrase*

   The passphrase must be the same passphrase that was used when the backup file was created.
4. **To initiate the Restore operation, type the following:**

   -> **`set load_uri=`**
   *transfer_method***`://`***username:password***`@`***ipaddress_or_hostname***`/`***directorypath***`/`***filename*

   Where:

   - *transfer_method* can be tftp, ftp, sftp, scp, http, or https.
   - *username* is the name of the user account on the remote system. (*username* is required for scp, sftp, and ftp. *username* is not used for tftp, and it is optional for http and https.)
   - *password* is the password for the user account on the remote system. (*password* is required for scp, sftp, and ftp. *password* is not used for tftp, and it is optional for http and https.)
   - *ipaddress_or_hostname* is the IP address or the host name of the remote system.
   - *directorypath* is the storage location on the remote system.
   - *filename* is the name assigned to the backup file.

   For example:

   -> **`set load_uri=`**
   `scp://adminuser:userpswd@1.2.3.4/Backup/Lab9/SP123.config`

The Restore operation executes. The XML file is parsed. A Restore operation typically takes two to three minutes to complete.

Note – While the Restore operation is executing, sessions on the ILOM SP will be momentarily suspended. The sessions will resume normal operation once the Restore operation is complete.

Edit the Backup XML file

Topics

Description	Links
Edit the backup XML file	• "Edit the Backup XML File" on page 107

▼ Edit the Backup XML File

Before You Begin

- Before you use a backed up XML file on another system, you should edit the file to remove any information that is unique to a particular system, for example, the IP address.

The following is an example of a backed up XML file. The contents of the file are abbreviated for the example used in this procedure.

```
<SP_config version="3.0">
<entry>
<property>/SP/check_physical_presence</property>
<value>false</value>
</entry>
<entry>
<property>/SP/hostname</property>
<value>labysystem12</value>
</entry>
<entry>
<property>/SP/system_identifier</property>
<value>SUN BLADE X8400 SERVER MODULE, ILOM v3.0.0.0, r32722
</value>
</entry>
.
.
.
<entry>
<property>/SP/clock/datetime</property>
<value>Mon May 12 15:31:09 2008</value>
</entry>
.
.
.
```

```
<entry>
<property>/SP/config/passphrase</property>
<value encrypted="true">89541176be7c</value>
</entry>
.
.
.
<entry>
<property>/SP/network/pendingipaddress</property>
<value>1.2.3.4</value>
</entry>
.
.
.
<entry>
<property>/SP/network/commitpending</property>
<value>true</value>
</entry>
.
.
.
<entry>
<property>/SP/services/snmp/sets</property>
<value>enabled</value>
</entry>
.
.
.
<entry>
<property>/SP/users/john/role</property>
<value>aucro</value>
</entry>
<entry>
<entry>
<property>/SP/users/john/password</property>
<value encrypted="true">c21f5a3df51db69fdf</value>
</entry>
</SP_config>
```

1. **Consider the following in the example XML file:**
   - The configuration settings, with exception of the password and the passphrase, are in clear text.
   - The `check_physical_presence` property, which is the first configuration entry in the file, is set to `false`. The default setting is `true` so this setting represents a change to the default ILOM configuration.

- The configuration settings for `pendingipaddress` and `commitpending` are examples of settings that should be deleted before you use the backup XML file for a Restore operation because these settings are unique to each server.
- The user account `john` is configured with the `a,u,c,r,o` roles. The default ILOM configuration does *not* have any configured user accounts so this account represents a change to the default ILOM configuration.
- The SNMP `sets` property is set to enabled. The default setting is disabled.

2. **To modify the configuration settings that are in clear text, change the values or add new configuration settings.**

   For example:

   - To change the roles assigned to the user `john`, change the text as follows:

```
<entry>
<property>/SP/users/john/role</property>
<value>auo</value>
</entry>
<entry>
```

   - To add a new user account and assign that account the a,u,c,r,o roles, add the following text directly below the entry for user `john`:

```
<entry>
<property>/SP/users/bill/role</property>
<value>aucro</value>
</entry>
<entry>
```

   - To change a password, delete the `encrypted="true"` setting and the encrypted password string and enter the password in plain text. For example, to change the password for the user `john`, change the text as follows:

```
<entry>
<property>/SP/users/john/password</property>
<value>newpassword</value>
</entry>
```

3. **After you have made the changes to the backup XML file, save the file so that you can use it for a Restore operation on the same system or a different system.**

Resetting the ILOM Configuration

Topics

Description	Links
Reset the ILOM configuration to the default settings	• "Reset the ILOM Configuration to Defaults" on page 110

▼ Reset the ILOM Configuration to Defaults

Before You Begin

- To reset the ILOM configuration to the default settings, you need the Admin (a) role enabled.

Follow these steps to reset the ILOM configuration to default settings:

1. **Log in to the ILOM CLI.**
2. **Change to the** `/SP` **directory, type:**

   -> **`cd /SP`**
3. **Type one of the following commands, depending on the option you select to reset the default settings.**
   - If you want to reset the ILOM configuration using the `all` option, type:

     -> **`set reset_to_defaults=all`**

     On the next reboot of the ILOM SP, the ILOM configuration default settings are restored.
   - If you want to reset the ILOM configuration using the `factory` option, type:

     -> **`set reset_to_defaults=factory`**

     On the next reboot of the ILOM SP, the ILOM configuration default settings are restored and the log files are erased.
   - If you want to cancel a reset operation just previously specified, type:

     -> **`set reset_to_defaults=none`**

     The previously issued `reset_to_defaults` command is canceled provided the `reset_to_defaults=none` command is issued before the ILOM SP reboots.

CHAPTER 11

Updating ILOM Firmware

Topics

Description	Links
Review the prerequisites	• "Before You Begin" on page 112
Update ILOM firmware	• "Identify ILOM Firmware Version" on page 113 • "Download New Firmware on x64-Based Systems" on page 113 • "Download New Firmware on SPARC-Based Systems" on page 114 • "Update the Firmware Image" on page 114
Troubleshoot network problem during firmware update	• "Recover From a Network Failure During Firmware Update" on page 116
Reset the ILOM SP	• "Reset ILOM SP" on page 117

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• Configuration Management and Firmware Updates	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Updating ILOM Firmware	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)
• IPMI and SNMP hosts	• Configuring ILOM Firmware Settings	*Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413)

The ILOM 3.0 Documentation Collection is available at:
http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

Updating the ILOM Firmware

Topics

Description	Links
Review the prerequisites	• "Before You Begin" on page 112
Identify the current ILOM firmware version	• "Identify ILOM Firmware Version" on page 113
Download the firmware for your system	• "Download New Firmware on x64-Based Systems" on page 113 • "Download New Firmware on SPARC-Based Systems" on page 114
Update the firmware image	• "Update the Firmware Image" on page 114
Troubleshoot network problem during firmware update	• "Recover From a Network Failure During Firmware Update" on page 116

Before You Begin

Prior to performing the procedures in this section, the following requirements must be met:

- Identify the version of ILOM that is currently running on your system.
- Download the firmware image for your server or CMM from the Sun platform's product web site.
- Copy the firmware image to a server using a supported protocol (TFTP, FTP, HTTP, HTTPS). For a CLI update, copy the image to a local server. For a web interface update, copy the image to the system on which the web browser is running.
- If required by your platform, shut down your host operating system before updating the firmware on your server SP.
- Obtain an ILOM user name and password that has Admin (a) role account privileges. You must have Admin (a) privileges to update the firmware on the system.
- The firmware update process takes about six minutes to complete. During this time, do not perform other ILOM tasks. When the firmware update is complete, the system will reboot.

▼ Identify ILOM Firmware Version

Before You Begin

- To identify the firmware version, you need the Read Only (o) role enabled.

Follow these steps to identify the ILOM firmware version:

1. **Log in to the ILOM CLI.**
2. **At the command prompt, type** `version`**.**

   The following information appears:

```
SP firmware 3.0.0.1
SP firmware build number: #####
SP firmware date: Fri Nov 28 14:03:21 EDT 2008
SP filesystem version: 0.1.22
```

▼ Download New Firmware on x64-Based Systems

1. **Navigate to** `http://www.sun.com/download/`
2. **Click the View by Category tab.**
3. **Locate the Hardware Drivers section.**
4. **Click the X64 Servers and Workstations.**
5. **Click the link for the Integrated Lights Out Manager (ILOM) Server software release version that you want to download.**
6. **Click Download.**
7. **Select the Platform and Language for your download.**
8. **Enter your Username and Password.**

   If you do not have a Username and Password, you can register free of charge by clicking **Register Now**.
9. **Click Accept License Agreement.**
10. **Click the appropriate firmware image file name:**

    `ilom.`*`firmware`*`.xxx`

    For example:

    - `ilom.X6220-2.0.3.2-r26980.ima`
    - `ilom.X6220-2.0.3.2-r26980.pkg`
11. **Go to** "Update the Firmware Image" on page 114**.**

▼ Download New Firmware on SPARC-Based Systems

1. **Navigate to** `http://sunsolve.sun.com`
2. **Click Accept to accept the License Agreement.**
3. **Click on Patches and Updates.**
4. **Under the heading Download Product-Specific Patches, click on Product Patches.**
5. **Under the heading Hardware, in the PROM row, click on Sun System Firmware.**
6. **Select the latest firmware update for your server. Confirm your choice by clicking on the associated Readme link and read the patch update information.**
7. **Click** `HTTP` **to download the zip file package.**
8. **Put the zip package on a TFTP server that is accessible from your network.**
9. **Unzip the package.**
10. **Go to** "Update the Firmware Image" on page 114**.**

▼ Update the Firmware Image

Before You Begin

- To update the ILOM firmware, you need the Admin (`a`) role enabled.
- If required by your platform, shut down your host operating system before updating the firmware on your server SP.
- To gracefully shut down your host operating system, use the `Remote Power Controls` -> `Graceful Shutdown and Power Off` option in the ILOM web interface, or issue the `stop /SYS` command from the ILOM CLI.

Follow these steps to update the firmware image:

1. **Log in to the ILOM CLI.**
2. **Verify that you have network connectivity to update the firmware.**

   For example:

   - To verify network connectivity on a server SP, type:

     -> **`show /SP/network`**

- To verify network connectivity on a CMM, type:

  -> **show /CMM/network**

3. **Type the following command to load the ILOM firmware image:**

   -> **load -source** *<supported_protocol>*://*<server_ip>*/*<path_to_firmware_image>*/*<filename.xxx>*

   A note about the firmware update process followed by message prompts to load the image are displayed. The text of the note depends on your server platform.

4. **At prompt for loading the specified file, type** y **for yes or** n **for no.**

   The prompt to preserve the configuration appears.

   For example:

   ```
   Do you want to preserve the configuration (y/n)?
   ```

5. **At the preserve configuration prompt, type** y **for yes or** n **for no.**

   Type y to save your existing ILOM configuration and to restore that configuration when the update process completes.

Note – Typing n at this prompt will advance you to another platform-specific prompt.

---

6. **Perform one of the following actions:**

   - If you have a **2.x firmware release installed** on your system, the system loads the specified firmware file then automatically reboots to complete the firmware update. **Proceed to Step 7**.
   - If you have a **3.x firmware release installed** on a **SPARC system**, the system loads the specified firmware file then automatically reboots to complete the firmware update. **Proceed to Step 7**.
   - If you have a **3.x firmware release installed** on an **x64 system**, a prompt to postpone the BIOS update appears. For example:

     ```
     Do you want to force the server off if BIOS needs to be upgraded
     (y/n)?
     ```

   a. **At the prompt to postpone the BIOS update, type** y **for yes or** n **for no.**

      The system loads the specified firmware file then automatically reboots to complete the firmware update.

Note – The BIOS prompt only appears on x64 systems currently running a 3.x firmware release. If you answer yes (`y`) to the prompt, the system postpones the BIOS update until the next time the system reboots. If you answer no (`n`) to the prompt, the system automatically updates the BIOS, if necessary, when updating the firmware.

b. Proceed to Step 7.

7. **Reconnect to the ILOM server SP or CMM using an SSH connection and using the same user name and password that you provided in Step 1 of this procedure.**

Note – If you did not preserve the ILOM configuration before the firmware update, you will need to perform the initial ILOM setup procedures to reconnect to ILOM.

8. **Ensure that the proper firmware version was installed. At the CLI prompt, type:**

```
-> version
```

▼ Recover From a Network Failure During Firmware Update

If you were performing the firmware update process and a network failure occurs, ILOM will automatically time-out and reboot the system.

Follow these steps to recover from a network failure during firmware update:

1. **Address and fix the network problem.**
2. **Reconnect to the ILOM SP.**
3. **Restart the firmware update process.**

Resetting ILOM SP

Topics

Description	Links
Reset ILOM service processor	• "Reset ILOM SP" on page 117

▼ Reset ILOM SP

If you need to reset your ILOM service processor (SP), you can do so without affecting the host OS. However, resetting an SP disconnects your current ILOM session and renders the SP unmanageable during reset.

Before You Begin

- To reset the SP, you need the Reset and Host Control (`r`) role enabled.
- After updating the ILOM/BIOS firmware, you must reset the ILOM SP.

After updating the ILOM/BIOS firmware, follow these steps to reset the SP:

1. **Log in to the ILOM CLI.**
2. **Type the following command:**

   -> **`reset /SP`**

   The SP resets and reboots.

CHAPTER 12

Managing Remote Hosts

Topics

Description	Links
Review the prerequisites	• "Before You Begin" on page 120
Set up storage redirection to redirect storage devices	• "Performing the Initial Setup Tasks for Storage Redirection" on page 120 • "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126
Control the power state of a remote server module	• "Issuing Power State Commands" on page 132
Run diagnostic tests	• "Diagnosing x64 Systems Hardware Issues" on page 133 • "Diagnosing SPARC Systems Hardware Issues" on page 136

Related Topics

For ILOM	Chapter or Section	Guide
• Concepts	• Remote Host Management Options	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410)
• Web interface	• Managing Remote Hosts	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411)

The ILOM 3.0 Documentation Collection is available at:
http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic.

Performing the Initial Setup Tasks for Storage Redirection

The following table presents an ordered list of tasks that you must perform to set up the Storage Redirection CLI feature in ILOM.

Step	Task	Description
1	Ensure that all requirements are met prior to performing the initial setup procedures in this section.	• "Before You Begin" on page 120
2	Install (or open) the Storage Redirection Service and specify how to you want to access this service in the future.	• "Start Storage Redirection Service" on page 121
3	Download and install the Storage Redirection Client.	• "Download and Install the Storage Redirection Client" on page 124.

Note – The Storage Redirection CLI in ILOM 3.0 is supported on all Sun x64 processor-based servers and some Sun SPARC processor-based servers. This feature is not supported on chassis monitoring modules (CMMs) or x64 processor-based servers running ILOM 2.0.

Before You Begin

Prior to setting up your system for storage redirection, the following prerequisites must be met.

- A connection is established from your local system to a remote host server SP ILOM web interface.
- Server module SP must be running ILOM 3.0 or later.

Note – The Storage Redirection CLI is not supported in ILOM 2.0. It is also not supported on CMMs running ILOM 2.0 or 3.0.

- The Java runtime environment (1.5 or later) is installed on your local system. To download the latest Java runtime environment, see `http://java.com.`

Note – If you do not have `JAVA_HOME` environment configured on your desktop, you might need to enter the full path

- Any user with a valid user account in ILOM can start or install the Storage Redirection Service or Client on his or her local system. However, after the initial setup for the Storage Redirection CLI is complete, you will be required to enter a valid Admin (`a`) or Console (`c`) role account to start or stop the redirection of a storage device (CD/DVD, or ISO image) on a remote server.
- The default network communication port provided for Storage Redirection CLI is 2121. This default socket port enables the Storage Redirection CLI to communicate over the network with a remote host server SP. If you need to change the default network port, you must edit the `Jnlpgenerator-cli` file to manually override the default port number (2121). For instructions for changing this port, see "View and Configure Serial Port Settings" on page 30.

▼ Start Storage Redirection Service

Before You Begin

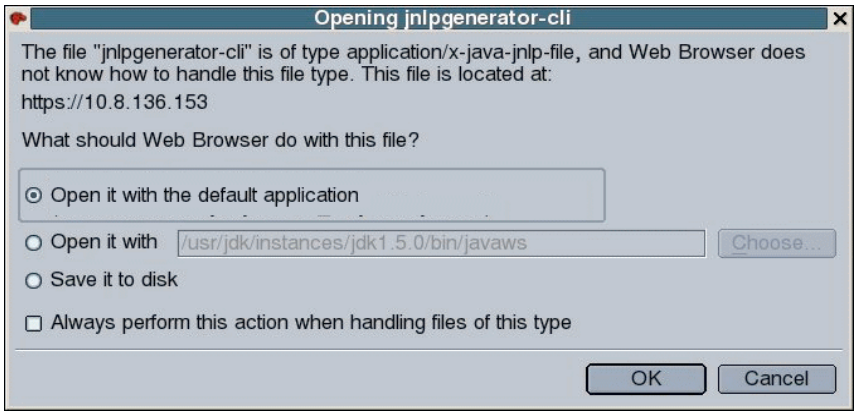
- A single session of the Storage Redirection Service must be started on your local system prior to launching the Storage Redirection CLI.

Follow these steps to start the Storage Redirection Service and to specify whether you want to start this service in the future from the ILOM web interface or from a command window or terminal:

1. **Log in to the SP ILOM web interface.**
2. **Select Remote Control --> Redirection.**

   The Launch Redirection page appears.
3. **Click** `Launch Service`**.**

   The Opening Jnlpgenerator-cli dialog appears.



4. **In the Opening Jnlpgenerator-cli dialog, perform one of the following actions:**

   - To save the `jnlpgenerator-cli` file on your local system and run the service directly from a command line, select `Save it to disk` then click `OK`.

     If you select this option, you will *not* need to subsequently sign in to the ILOM web interface to start the service. You will be able to start the service directly from a command window or terminal.

   - To run the service directly from the ILOM web interface, select `Open it with the default application` then click `OK`.

     If you select this option, the `jnlp` file is not saved on your local system and you will need to subsequently sign in to the ILOM web interface to start the service prior to launching the Storage Redirection CLI.

Note – If you do not want the `Opening Jnlpgenerator-cli dialog` to reappear each time you start the service from the ILOM web interface, you can select (enable) the check box for `Always perform this action when handling files of this type`. However, if you choose to enable this option, you will no longer be able to display this dialog when starting the service or installing the service from the ILOM web interface.

Note – If, in the future, you need to modify the default communication port number (2121) shipped with the Storage Redirection feature, you will need to display the `Opening Jnlpgenerator-cli` dialog to save and edit the `jnlpgenerator-cli` file on your system. In this instance, it is not recommended that you select (enable) the option for `Always perform this action when handling files of this type`. For more information about changing the default port number, see "View and Configure Serial Port Settings" on page 30.

Several dialogs will appear informing you that the Java Web Start application is downloading.

5. **Perform one of the following actions:**

   - If you chose to save the `jnlpgenerator-cli` file in Step 4, perform these steps.

   a. **In the Save As dialog, save the `jnlpgenerator-cli` file to a location on your local system.**

   b. **To start the service from the command line, open a command window or terminal.**

   c. **Navigate to the location where the `jnlpgenerator-cli` file is installed, then issue the `javaws rconsole.jnlp` command to start the service.**

      For example:

      `-> cd` *<jnlp file location>***`javaws rconsole.jnlp`**

   - If you chose to run the service directly from the web interface (you selected Open with default application), perform the following step:

   a. **In the Warning Security dialog, click `Run` to start the Storage Redirection service.**

Note – If the Storage Redirection service fails to start, an error message appears informing you of an error condition. Otherwise, if an error message did not appear, the service is started and is waiting for user input.

▼ Download and Install the Storage Redirection Client

Follow these steps to download and install the Storage Redirection client on your local system:

Note – The Storage Redirection client is a one-time client installation.

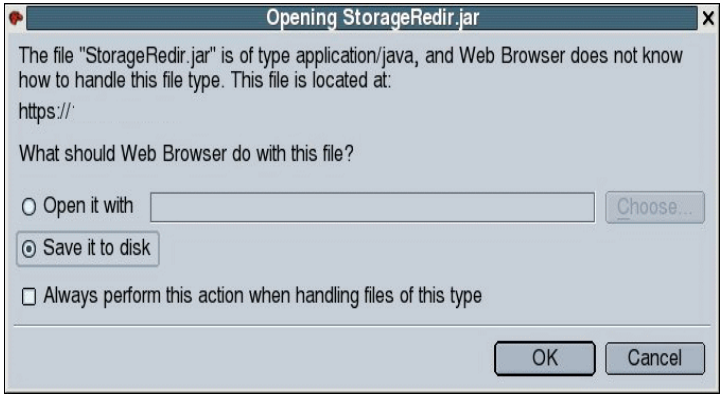
---

1. **In the SP ILOM web interface, select Remote Control --> Redirection.**

   The Launch Redirection page appears.

2. **Click** `Download Client`**.**

   The Opening StorageRedir.jar dialog appears.



3. **In the Opening StorageRedir.jar dialog, click** `Save it to Disk` **then click** `OK`**.**

   The Save As dialog appears.

Note – If you do not want the `Opening StorageRedir` dialog to reappear when installing the `.jar` file on other remote clients, you can select (enable) the check box for `Always perform this action when handling files of this type`. However, if you choose to enable this option, you will no longer be able to display this dialog (`Opening StorageRedir`) in the future when downloading the `.jar` file.

---

4. **In the Save As dialog, save the** `StorageRedir.jar` **file to a location on your local system.**

Launching the Storage Redirection CLI to Redirect Storage Devices

The following table presents an ordered list of tasks that you must perform to redirect storage media from the Storage Redirection CLI.

Step	Task	Links
1	Ensure that all requirements are met before using the Storage Redirection CLI	• "Before You Begin" on page 125
2	Launch the Storage Redirection CLI	• "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126
3	If applicable, verify that Storage Redirection Service is running	• "Verify the Storage Redirection Service Is Running" on page 127
4	If applicable, display command line Help; or learn more about the Storage Redirection command line modes, syntax, and usage	• "Display Storage Redirection CLI Help Information" on page 128
5	Redirect a storage device from the CLI	• "Start Redirection of Storage Device" on page 129
6	View a list of active storage devices	• "View Active Storage Redirections" on page 130
7	Stop the redirection of a storage device	• "Stop Redirection of Storage Device" on page 130

Before You Begin

The following requirements must be met prior to performing the procedures in this section.

- The Storage Redirection Service must be started on your local system. If you installed the service on your local system, you can start it from a command window or terminal. If you did not install the service on your local system, you must start it from the ILOM web interface. For information about how to start or install the Storage Redirection service, see "Start Storage Redirection Service" on page 121.

- The Storage Redirection client (`StorageRedir.jar`) must be installed on your local system. For more information about how to install the Storage Redirection Client, see "Download and Install the Storage Redirection Client" on page 124.
- The Java Runtime Environment (1.5 or later) must be installed on your local system. To download the latest Java runtime environment, see `http://java.com`.
- A valid Admin (`a`) or Console (`c`) role account in ILOM is required to start or stop the redirection of a storage device (CD/DVD, or ISO image) on a remote server. For more information about user accounts and roles, see "Assign Roles to a User Account" on page 41.

Note – Any user with a valid user account in ILOM can launch the Storage Redirection CLI (from a command window or terminal) and verify the status of the the service, or view the occurrence of an active storage redirection.

- For more information about the Storage Redirection command-line modes, syntax and usage, see "Storage Redirection Command-Line Modes, Syntax, and Usage" on page 165.

▼ Launch Storage Redirection CLI Using a Command Window or Terminal

Before You Begin

- Prior to launching the Storage Redirection CLI, you must have started the Storage Redirection service. For instructions for launching the service, see "Start Storage Redirection Service" on page 121.

Follow these steps to launch the Storage Redirection CLI from a command window or terminal:

1. **Open a command-line interface.**

   For example:

   - Windows systems: Click Run from the Start menu and type `cmd` then click `OK`.
   - Solaris or Linux systems: Open a terminal window on the desktop.

2. **Perform one of the following actions:**

   - To enter commands from an **interactive shell mode**, do the following:

   a. **In the command-line interface, navigate to the directory where the Storage Redirection client (`StorageRedir.jar`) was installed using the `cd` command.**

      For example:

cd *<my_settings>/<storage_redirect_directory>*

b. At the directory prompt, enter the following command to launch the Storage Redirection CLI.

```
java -jar StorageRedir.jar
```

For example:

*C:\Documents and Settings\<redirectstorage>***java -jar StorageRedir.jar**

The `<storageredir>` prompt appears.

- To enter commands from an **non-interactive shell mode,** do the following:

a. In the command-line interface, enter the command to launch the Storage Redirection CLI (`java -jar StorageRedir.jar`) **at the shell prompt** (`$`).

```
$ java -jar StorageRedir.jar
```

Note – If you do not have a `JAVA_HOME` environment configured, you might need to use the full path to your Java binary. For example, if your JDK package was installed under `/home/`*user_name*`/jdk` then you would type:
`/home/`*user_name*`/jdk/bin/java -jar ...`

Note – If the Storage Redirection CLI fails to launch, a detailed error message appears explaining the error condition. Otherwise, the Storage Redirection CLI is ready for user input.

▼ Verify the Storage Redirection Service Is Running

Before You Begin

- The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.

Follow this step to verify whether the Storage Redirection service is active.

- **At the `<storageredir>` prompt, type the following command to verify that the Storage Redirection service is active:**

```
test-service
```

For example:

```
<storageredir> test-service
```

Alternatively, you could enter this same command (`test-service`) using the non-interactive shell mode syntax. For more information, see "Storage Redirection Command-Line Modes, Syntax, and Usage" on page 165.

A message appears stating whether the service connection passed or failed.

Note – If the service connection fails, you will need to start the Storage Redirection Service from the ILOM web interface or from a command window (if the service was installed) by issuing the `javaws rconsole.jnlp` command. For details, see "Start Storage Redirection Service" on page 121.

▼ Display Storage Redirection CLI Help Information

Before You Begin

- The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.

Follow this step to display the Storage Redirection CLI Help information.

- **At the `<storageredir>` prompt, type the following command to display the command-line help:**

  `help`

  For example:

  ```
  <storageredir> help
  ```

  The following information about the command syntax and usage appears:

```
Usage:
        list [-p storageredir_port] [remote_SP]
        start -r redir_type -t redir_type_path
          -u remote_username [-s remote_user_password]
          [-p storageredir_port] remote_SP
        stop -r redir_type -u remote_username
        [-s remote_user_password] [-p storageredir_port] remote_SP
        stop-service [-p storageredir_port]
        test-service [-p storageredir_port]
        help
        version
```

```
quit
```

Alternatively, you could enter this same command (`help`) using the non-interactive shell mode syntax. For more information, see "Storage Redirection Command-Line Modes, Syntax, and Usage" on page 165.

▼ Start Redirection of Storage Device

Before You Begin

- To start the redirection of a storage device, you need the Admin (`a`) or Console (`c`) roles enabled.
- The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.
- Commands shown in the following procedure should be entered as one continuous string.

Follow this step to start the redirection of a storage device from the Storage Redirection CLI:

- **At the `<storageredir>` prompt, type the `start` command followed by the commands and properties for the *redirection device type*, *path to device*, *remote SP user_name and password*, and the *IP address* of the remote SP.**

  For example:

  ```
  <storageredir> start -r redir_type -t redir_type_path -u remote_username [-s remote_user_password] [-p non_default_storageredir_port] remote_SP_IP
  ```

  Alternatively, you could enter this same command (`start`) using the non-interactive shell mode syntax. For more information, see "Storage Redirection Command-Line Modes, Syntax, and Usage" on page 165.

Note – You must specify a valid Admin or Console role account (`-u` *remote_username* `[-s` *remote_user_password*`]`) to start the redirection of a storage device on a remote server. If you do not specify the password command (`-s` *remote_user_password*), the system will automatically prompt you for it.

▼ View Active Storage Redirections

Before You Begin

- The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.

Follow this step to view the active storage redirections on one or more remote host server SPs:

- **At the** `<storageredir>` **prompt, type the** `list` **command followed by the sub-commands and properties for any non-default storage redirection** ***port(s)*** **and the** ***IP address(es)*** **of the remote host server SP.**

  For example:

  `<storageredir>` **`list`** [`-p` *non_default _storageredir_port*] *remote_SP*

  Alternatively, you could enter this same command (`list`) using the non-interactive shell mode syntax. For more information, see "Storage Redirection Command-Line Modes, Syntax, and Usage" on page 165.

  A list appears identifying the active storage redirections for each server SP specified.

▼ Stop Redirection of Storage Device

- To stop the redirection of a storage device, you need the Admin (`a`) or Console (`c`) role enabled.
- The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.
- Commands shown in the following procedure should be entered as one continuous string.

Follow this step to stop the redirection of a storage device on a remote server:

- **At the** `<storageredir>` **prompt, type the** `stop` **command followed by the commands and properties for the:** ***storage device type, remote SP user name*** **and** ***password, storage redirection port*** **and the** ***IP address*** **of the remote host server SP.**

For example:

```
<storageredir> stop -r redir_type -u remote_username [-s
remote_user_password] [-p non_defult_storageredir_port] remote_SP
```

Alternatively, you could enter this same command (`stop`) using the non-interactive shell mode syntax. For more information, see "Storage Redirection Command-Line Modes, Syntax, and Usage" on page 165.

Note – You must specify a valid Admin or Console role account (`-u` *remote_username* `[-s` *remote_user_password*`]`) to stop the redirection of a storage device on a remote server. If you do not specify the password command (`-s` *remote_user_password*) the system will automatically prompt you for it.

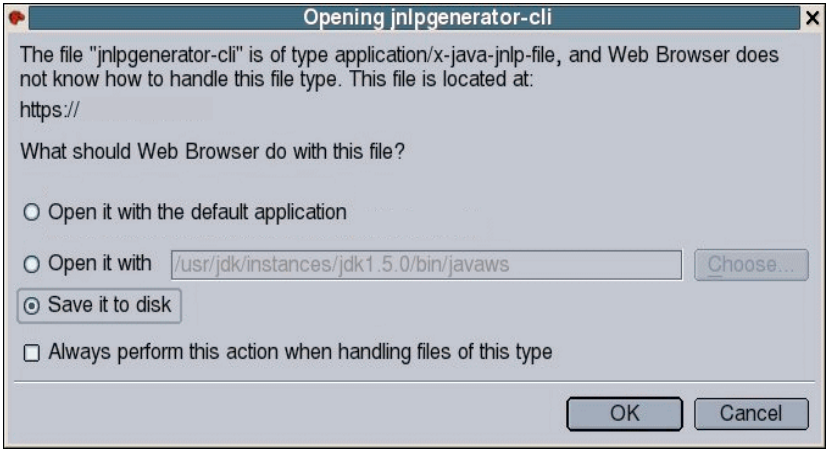
▼ Change the Default Storage Redirection Network Port: 2121

1. **In the SP ILOM web interface, select Remote Control --> Redirection.**

   The Launch Redirection page appears.

2. **Click** `Launch Service`**.**

   The Opening Jnlpgenerator-cli dialog appears.



3. **In the Opening Jnlpgenerator-cli dialog, select** `Save it to disk` **then click** `OK`**.**

   The Save As dialog appears.

4. **In the Save As dialog, specify the location where you want to save the** `jnlpgenerator-cli` **file.**

5. **Open the** `jnlpgenerator-cli` **file using a text editor and modify the port number referenced in this file.**

   For example:

```
<application-desc>
<argument>cli</argument>
<argument>2121</argument>
</application-desc>
```

In the `<application-desc>` you can change the **second argument** to any port number that you want to use.

6. **Save the changes you made and close the** `jnlpgenerator-cli` **file.**
7. **Use the** `javaws` **to start the Storage Redirection service from your local client.**

   For example:

```
javaws jnlpgenerator-cli
```

Note – If you do not use the default port number provided, you must always identify the non-default port number in the Storage Redirection command-line interface when starting, stopping or viewing storage redirections.

Issuing Power State Commands

From a command window or terminal, you can issue the following commands to remotely control the power state of a host server:

- **`start`**. Use the `start` command to turn on full power to the remote host server.

  Example: -> `start /SYS`

- **`stop`**. Use the `stop` command to shut down the OS gracefully prior to powering off the remote host server.

  Example: -> `stop /SYS`

- **`stop -f`**. Use the `stop -f` command to immediately turn off the power to the remote host server.

  Example: -> `stop -f /SYS`

- **`Reset`**. Use the `reset` command to immediately reboot the remote host server.

  Example: -> `reset /SYS`

For information about connecting to a host server or issuing commands from the ILOM CLI, see "Configuring ILOM Communication Settings" on page 23.

Diagnosing x64 Systems Hardware Issues

Task	Link
Ensure that the requirements for configuring and running diagnostic tests are met	"Configure and Run Pc-Check Diagnostics" on page 133
Configure and run Pc-Check diagnostic tests	"Configure and Run Pc-Check Diagnostics" on page 133
Generate a NMI to a host	"Generate a Non-Maskable Interrupt" on page 134

▼ Configure and Run Pc-Check Diagnostics

Before You Begin

- To configure Pc-Check Diagnostics, you need the Reset and Host Control (`r`) role enabled.

Follow these steps to configure and run Pc-Check Diagnostic tests:

1. **Log in to the ILOM CLI.**
2. **Type the following commands to enable the diagnostic tests:**

```
-> cd /HOST/diag/
/HOST/diag

-> show /HOST/diag
   Targets:

   Properties:
     state = disabled

   Commands:
       cd
       set
       show

-> set state=extended  This will enable Pc-Check to run a 20-40 minute test suite
OR
-> set state=enabled   This will enable Pc-Check to run a 4-5 minute test suite
OR
-> set state=manual    This will enable you to select specific Pc-Check tests to run

-> show
   Targets:

   Properties:
       state = enabled

   Commands:
       cd
       set
       show
```

3. Reset the power on the host to run the PC diagnostic tests.

▼ Generate a Non-Maskable Interrupt

Caution – Depending on the host OS configuration, generating a non-maskable interrupt (NMI) may cause the OS to crash, stop responding, or wait for external debugger input.

Before You Begin

- To generate a NMI, you need the Reset and Host Control (r) role enabled.

Follow these steps to generate a NMI to a host:

1. **Log in to the CLI.**
2. **Type the following commands:**

```
-> cd /HOST
/HOST

-> show
/HOST
Targets:
     diag

Properties:
     generate_host_nmi = (Cannot show property)

Commands:
     cd
     set
     show

-> set generate_host_nmi=true
set 'generate_host_nmi' to 'true'
```

Diagnosing SPARC Systems Hardware Issues

Task	Link
Ensure that the requirements for configuring and running diagnostic tests are met	"Before You Begin" on page 136
Configure the system to run diagnostic tests	"Configure Diagnostics Mode" on page 136
Specify which diagnostic triggers to activate	"Specify the Diagnostics Trigger" on page 137
Specify the level of diagnostics that you want to execute	"Specify Level of Diagnostics" on page 137
Specify the verbosity output of the excuted diagnostic tests	"Specify Verbosity of Diagnostics Output" on page 138

Before You Begin

Prior to performing the procedures in this section, the following requirement must be met:

- To configure and run diagnostic tests on a SPARC system, you need the Reset and Host Control (`r`) role enabled.

▼ Configure Diagnostics Mode

Use the `/HOST/diag` host mode property to control whether diagnostics are enabled and to specify which diagnostic mode is enabled.

Follow these steps to configure the diagnostic mode:

1. Log in to the ILOM CLI.

2. **At the command prompt, type the following command:**

```
-> set /HOST/diag mode=value
```

Where *value* is one of the following:

- `off` – Do not run any diagnostics.
- `normal` – Run diagnostics (the default value).

3. **Reset the power on the host to run the diagnostic tests.**

▼ Specify the Diagnostics Trigger

You can select one or more triggers that will cause a power-on self-test (POST) to be run on the host.

Follow these steps to set the trigger levels:

1. **Log in to the ILOM CLI.**
2. **At the command prompt, type the following command:**

```
-> set /HOST/diag trigger=value
```

Where *value* can be one of the following:

- `none` – Diagnostics will not be triggered to run.
- `user-reset` – Diagnostics will be run upon a user-invoked reset.
- `power-on-reset` – Diagnostics will be run when power is applied.
- `error-reset` – Diagnostics will be run upon any error-invoked reset.
- `all-resets` – Diagnostics will be run for any of the above reset types.

▼ Specify Level of Diagnostics

There are separate ILOM CLI properties that enable you to specify the level of diagnostic testing to be executed, depending on how the diagnostics were triggered to run. This gives granular control of how much diagnostic testing is performed in different host reset situations.

Use the `/HOST/diag` *level* property to specify the level of diagnostic testing to be executed when diagnostics are enabled.

Follow these steps to specify the level of diagnostics to be executed:

1. **Log in to the ILOM CLI.**
2. **Perform the one of the following commands, depending on how the host is reset:**
   - To specify the diagnostic level when the host is powered on, type the following command:

```
-> set /HOST/diag power_on_level=value
```

   - To specify the diagnostic level when the host is reset by the user, type the following command::

```
-> set /HOST/diag user_reset_level=value
```

   - To specify the diagnostic level when the host is reset due to a system error, type the following command:

```
-> set /HOST/diag error_reset_level=value
```

   Where *value* is one of the following:
   - `min` – Run the minimum level of diagnostics to verify the system.
   - `max` – Run the maximum set of diagnostics to fully verify system health (the default value).

Note – For backward compatibility with ILOM 2.x, the former property `/HOST/diag` *level* is still supported as a shorcut for specifying the same diagnostic level for all trigger types. Any value set to `/HOST/diag` *level* will be applied to all three trigger-specific properties: `power_on_level`, `user_reset_level`, and `error_reset_level`.

---

3. **Reset the power on the host to run the diagnostic tests.**

▼ Specify Verbosity of Diagnostics Output

There are specific ILOM CLI properties that enable you to specify the output verbosity of executed diagnostics, depending on how the diagnostics were triggered to run. This gives granular control of how much diagnostics output is given in different host reset situations.

Follow these steps to specify the verbosity of the diagnostics output:

1. **Log in to the ILOM CLI.**

2. **Perform one of the following commands, depending on how the host was reset:**

   - To specify the output verbosity for diagnostics executed when the host is powered on, type the following command:

```
-> set /HOST/diag power_on_verbosity=value
```

   - To specify the output verbosity for diagnostics executed when the host is reset by the user, type the following command:

```
-> set /HOST/diag user_reset_verbosity=value
```

   - To specify the output verbosity for diagnostics executed when the host is reset due to a system error, type the following command:

```
-> set /HOST/diag error_reset_verbosity=value
```

   Where *value* is one of the following:

   - `none` – Diagnostics do not print any output on the system console when running, unless a fault is detected.
   - `min` – Diagnostics print a limited amount of output on the system console.
   - `normal` – Diagnostics print a moderate amount of output on the system console (the default value).
   - `max` – Diagnostics print full output on the system console, including the name and results of each test being run.
   - `debug` – Diagnostics print extensive debugging output on the system console, including devices being tested and debug output of each test.

Note – For backward compatibility with ILOM 2.x, the former property `/HOST/diag` *verbosity* is still supported as a shorcut for specifying the same output verbosity for all trigger types. Any value set to `/HOST/diag` *verbosity* will be applied to all three trigger-specific verbosity properties: `power_on_verbosity`, `user_reset_verbosity`, and `error_reset_verbosity`.

---

3. **Reset the power on the host to run the diagnostic tests.**

APPENDIX **A**

CLI Command Reference

CLI Command Reference

This section provides reference information about the CLI commands.

`cd` Command

Use the `cd` command to navigate the namespace. When you `cd` to a target location, that location then becomes the default target for all other commands. Using the **-**`default` option with no target returns you to the top of the namespace. Typing `cd -default` is the equivalent of typing `cd /`. Typing just `cd` displays your current location in the namespace. Typing `help targets` displays a list of all targets in the entire namespace.

Syntax

cd *target*

Options

[-default] [-h|help]

Targets and Properties

Any location in the namespace.

Examples

To create a user named `emmett`, **cd** to `/SP/users`, then execute the create command with `/SP/users` as the default target.

```
-> cd /SP/users

-> create emmett
```

To find your location, type **cd**.

```
-> cd /SP/users
```

create Command

Use the create command to set up an object in the namespace. Unless you specify properties with the create command, they are empty.

Syntax

create **[***options***]** *target* **[***propertyname=value***]**

Options

[-h|help]

Targets, Properties, and Values

TABLE 12-1 Targets, Properties and Values for create Command

Valid Targets	Properties	Values	Default
/SP/users/*username*	password	<string>	(none)
	role	administrator | operator | a | u | c | r | o | s	o
/SP/services/snmp/communities /*communityname*	permissions	ro | rw	ro
/SP/services/snmp/user/ *username*	authenticationprotocol	MD5	MD5
	authenticationpassword	<string>	(null string)
	permissions	ro | rw	ro
	privacyprotocol	none | DES	DES
	privacypassword	<string>	(null string)

Example

```
-> create /SP/users/susan role=administrator
```

delete Command

Use the delete command to remove an object from the namespace. You will be prompted to confirm a delete command. Eliminate this prompt by using the -script option.

Syntax

delete [*options***] [-script]** *target*

Options

[-h|help] [-script]

Targets

TABLE 12-2 Targets for delete Command

Valid Targets
/SP/users/*username*
/SP/services/snmp/communities/*communityname*
/SP/services/snmp/user/*username*

Examples

```
-> delete /SP/users/susan
-> delete /SP/services/snmp/communities/public
```

dump Command

Use the dump command to transfer a file from a target to a remote location specified by the URI.

Syntax

dump -destination <*URI***>** *target*

Options

[-destination]

exit Command

Use the exit command to end a CLI session.

Syntax

exit [*options***]**

Options

[-h|help]

help Command

Use the help command to display Help information about commands and targets. Using the -o|output terse option displays usage information only. The -o|output verbose option displays usage, description, and additional information including examples of command usage. If you do not use the -o|output option, usage information and a brief description of the command are displayed.

Specifying *command targets* displays a complete list of valid targets for that command from the fixed targets in /SP and /SYS. Fixed targets are targets that cannot be created by a user.

Specifying *command targets* legal displays copyright information and product use rights.

Syntax

help [*options***]** *command target*

Options

[-h|help] [-o|output terse|verbose]

Commands

cd, create, delete, exit, help, load, reset, set, show, start, stop, version

Examples

```
-> help load
The load command transfers a file from a remote location specified
by the URI and updates the given target.
Usage: load [-script] -source <URI> [target]
-source: Specify the location to get a file.
```

```
-> help -output verbose reset
The reset command is used to reset a target.
Usage: reset [-script] [target]
Available options for this command:
-script: Do not prompt for yes/no confirmation and act as if yes
were specified.
```

`load` Command

Use the `load` command to transfer an image file from a source, indicated by a Uniform Resource Indicator (URI), to update ILOM firmware. The URI can specify a protocol and credentials used for the transfer. The `load` command supports multiple protocols (TFTP, SCP, FTP). If credentials are required and not specified, the command prompts you for a password. Using the `-script` option eliminates the prompt for a yes or no confirmation and the command acts as if yes were specified.

Note – Use this command to update your ILOM firmware and BIOS.

TABLE 12-3 Targets, Properties, and Values for `load` Command

Valid Targets	Properties	Values	Default
/SP/users/*username*	password	<string>	(none)
	role	administrator | operator | a | u | c | r | o | s	o

Syntax

load -source *URI*

Options

[-h|help] [-script]

Example

```
-> load -source tftp://ip_address/newmainimage
```

Note – A firmware upgrade will cause the server and ILOM to be reset. It is recommended that a graceful shutdown of the server be done prior to the upgrade procedure. An upgrade takes about five minutes to complete. ILOM will enter a special mode to load new firmware. No other tasks can be performed in ILOM until the firmware upgrade is complete and ILOM is reset.

```
 -> load -source tftp://ip_address/newmainimage
Are you sure you want to load the specified file (y/n)? y
File upload is complete.
Firmware image verification is complete.
Do you want to preserve the configuration (y/n)? n
Updating firmware in flash RAM:
.
Firmware update is complete.
ILOM will not be restarted with the new firmware.
```

`reset` Command

Use the `reset` command to reset the state of the target. You will be prompted to confirm a reset operation. Eliminate this prompt by using the `-script` option.

Note – The `reset` command does not affect the power state of hardware devices.

Syntax

`reset [`*options***`]`** *target*

Options

`[-h|help] [-script]`

(The `-f|force` option is supported on SPARC-based systems.)

Targets

TABLE 12-4 Targets for `reset` Command

Valid Targets
/SP
/SYS

Examples

```
-> reset /SP
-> reset /SYS
```

`set` Command

Use the `set` command to specify the properties of the target.

Syntax

set **[***options***]** *target* **[***propertyname***=***value***]**

Options

[-h|help]

TABLE 12-5 Targets, Properties, and Values for `set` Command

Valid Targets	Properties	Values	Default
/SP/alertmgmt/rules	testalert	true	(none)
/SP/alertmgmt/rules/ *rulename* (*rulename* = 1 through 15)	community_or_username	<string>	public
	destination	email_address	(none)
	destination_port	<integer>	0
	event_class_filter	" " | Log | Email | Internal | Captive Shell | Backup | Restore | Audit | IPMI | Chassis | Fault | System | ActDir	(none)
	event_type_filter	" " | Developer | Connection | Send | Product | Chassis | Command Entered | State | Action | Fault | Repair | Warning	(none)
	level	disable | down | critical | major | minor	(none)
	snmp_version	1 | 2c | 3	3
	type	email | ipmipet | snmptrap	(none)
/SP/clock	datetime	current date and time	*<string>*
	timezone	EST | PST8PDT	GMT
	usentpserver	enabled | disabled	disabled
/SP/services/http	port	<integer>	80
	secureredirect	enabled | disabled	enabled
	servicestate	enabled | disabled	disabled
/SP/services/https	port	<integer>	443
	servicestate	enabled | disabled	disabled
/SP/services/ipmi	servicestate	enabled | disabled	enabled
/SP/services/kvms	mousemode	absolute | relative	absolute
	servicestate	enabled | disabled	enabled

TABLE 12-5 Targets, Properties, and Values for `set` Command *(Continued)*

Valid Targets	Properties	Values	Default
/SP/services/snmp	engineid	<hexadecimal>	*IP address*
	port	<integer>	161
	sets	enabled | disabled	disabled
	v1	enabled | disabled	disabled
	v2c	enabled | disabled	disabled
	v3	enabled | disabled	enabled
	servicestate	enabled | disabled	enabled
/SP/services/snmp/ communities/private	permission	ro | rw	rw
/SP/services/snmp/ communities/public	permission	ro | rw	ro
/SP/services/snmp/user */username*	authenticationprotocol	MD5	MD5
	authenticationpassword	<string>	(null string)
	permissions	ro | rw	ro
	privacyprotocol	none | DES	DES
	privacypassword	<string>	(null string)
/SP/services/ssh	external_host		
	generate_new_key_action	true	(none)
	generate_new_key_type	rsa | dsa	(none)
	restart_sshd_action	true	(none)
	state	enabled | disabled	enabled
/SP/services/sso	state	enabled | disabled	enabled
/SP/users/*username*	role	administrator | operator | a | u | c | r | o | s	(none)
	password	<string>	(none)
/SP/clients/ activedirectory	state	enabled | disabled	disabled
	certfilestatus	<string>	(none)
	defaultrole	administrator | operator | a | u | c | r | o | s	o
	dnslocatormode	enabled | disabled	
	address	<ip address>	(none)
	port	<integer between 0-65535>	(none)
	strictcertmode	enabled | disabled	disabled
	timeout	<integer>	(none)
/SP/clients/ activedirectory/ admingroups/*n* where *n* is 1-5	name	<string>	(none)

TABLE 12-5 Targets, Properties, and Values for `set` Command *(Continued)*

Valid Targets	Properties	Values	Default
/SP/clients/activedirectory/opergroups/*n* where *n* is 1-5	name	<string>	(none)
/SP/clients/activedirectory/userdomains/*n* where *n* is 1-5	domain	<string>	(none)
/SP/clients/activedirectory/customgroups/*n* where *n* is 1-5	name	<string>	(none)
	roles	a | u | c | r | o | s | administrator | operator	o
/SP/clients/activedirectory/alternateservers/*n* where *n* is 1-5	address	<string>	(none)
	port	a | u | c | r | o | s | administrator | operator	o
/SP/clients/activedirectory/cert/	certstatus	<string>	(none)
	clear_action	true	(none)
	issuer	<string>	(none)
	load_uri	tftp | ftp | scp	(none)
	serial_number	<string>	(none)
	subject	<string>	(none)
	valid_from	<string>	(none)
	valid_until	<string>	(none)
	version	<string>	(none)
/SP/clients/activedirectory/dnslocatorqueries/*n* where *n* is 1-5	service	<DOMAIN>	(none)
/SP/clients/dns	auto_dns	enabled | disabled	disabled
	nameserver	<string>	(none)
	retries	<integer between 0 and 5>	(none)
	searchpath	<string>	(none)
	timeout	<integer between 1 and 10>	(none)

TABLE 12-5 Targets, Properties, and Values for `set` Command *(Continued)*

Valid Targets	Properties	Values	Default
/SP/clients/ldap	binddn	<username>	(none)
	bindpw	<string>	(none)
	defaultrole	administrator | operator | a | u | c | r | o | s	o
	address	<ipaddress> | none	(none)
	port	<integer>	389
	searchbase	<string>	(none)
	state	enable | disabled	disabled
/SP/clients/ldapssl	address	<ip address> or <DNS name>	(none)
	logdetail	none | high | medium | low | trace	(none)
	strictcertmode	enabled | disabled	disabled
	address	<ipaddress> | none	(none)
	port	<integer>	389
	defaultrole	administrator | operator | a | u | c | r | o | s	o
	state	enabled | disabled	disabled
/SP/clients/ ldapssl/ admingroups/*n* where *n* is 1-5	name	<string>	(none)
/SP/clients/ ldapssl/ opergroups/*n* where *n* is 1-5	name	<string>	(none)
/SP/clients/ ldapssl/ userdomains/*n* where *n* is 1-5	domain	<string>	(none)
/SP/clients/ ldapssl/ customgroups/*n* where *n* is 1-5	domain	<string>	(none)
/SP/clients/ ldapssl/ alternateservers/*n* where *n* is 1-5	domain	<string>	(none)

TABLE 12-5 Targets, Properties, and Values for `set` Command *(Continued)*

Valid Targets	Properties	Values	Default
/SP/clients/ldapssl/cert/*n* where *n* is 1-5	domain	<string>	(none)
/SP/clients/ntp/server/[1|2]	address	<ipaddress>	(none)
/SP/clients/radius	defaultrole	administrator | operator | a | u | c | r | o | s | none	operator
	address	<ipaddress> | none	(none)
	port	<integer>	1812
	secret	<string> | none	(none)
	state	enable | disabled	disabled
/SP/clients/smtp	address	<ipaddress>	*IP address*
	port	<integer>	25
	state	enabled | disabled	enabled
/SP/clients/syslog[1|2]	address	<ipaddress>	*IP address*
/SP/config	dump_uri	tftp | ftp | sftp | scp | http | https	(none)
	load_uri	tftp | ftp | sftp | scp | http | https	(none)
	passphrase	<string>	(none)
/SP/diag	snapshot	(none)	(none)
/SP/network	commitpending	true	(none)
	pendingipaddress	<ipaddress> | none	(none)
	pendingdiscovery	dhcp | static	dhcp
	pendingipgateway	<ipaddress> | none	(none)
	pendingipnetmask	<IP dotted decimal>	10.8.255.255
	state	enabled | disabled	enabled

TABLE 12-5 Targets, Properties, and Values for `set` Command *(Continued)*

Valid Targets	Properties	Values	Default
/SP/serial/external	commitpending	true	(none)
	flowcontrol	none	none
	pendingspeed	<integer from list>	9600
	speed	<integer from list>	9600
/SP/serial/host	commitpending	true	(none)
	pendingspeed	<integer from list>	9600
	speed	<integer from list>	9600
/SP/	check_physical_presence	true | false	(none)
	hostname	<string>	(none)
	reset_to_defaults	all | factory | none	(none)
	system_contact	<string>	(none)
	system_description	<string>	(none)
	system_identifier	<string>	(none)
	system_location	<string>	(none)

Examples

```
-> set /SP/users/susan role=administrator
```

```
-> set /SP/clients/ldap state=enabled binddn=proxyuser bindpw=ez24get
```

`show` Command

Use the `show` command to display information about targets and properties.

Using the `-display` option determines the type of information shown. If you specify `-display targets`, then all targets in the namespace below the current target are shown. If you specify `-display` properties, all property names and values for the target are shown. With this option you can specify certain property names, and only those values are shown. If you specify `-display all`, all targets in the namespace below the current target are shown, and the properties of the specified target are shown. If you do not specify a `-display` option, the `show` command acts as if `-display all` were specified.

The `-level` option controls the depth of the `show` command and it applies to all modes of the `-display` option. Specifying `-level 1` displays the level of the namespace where the object exists. Values greater than 1 return information for the target's current level in the namespace and the <*specified value*> levels below. If the argument is `-level all`, it applies to the current level in the namespace and everything below.

The `-o|output` option specifies the output and form of command output. ILOM only supports `-o table`, which displays targets and properties in tabular form.

The alias, `show components`, is a shortcut for the following CLI command:

```
-> show -o table -level all /SYS component state
```

The `show components` alias produces the same output as the above command. Thus, it enables you to restrict the table output to a single property below each target.

Syntax

show [*options***] [-display** *targets*|*properties*|*all***] [-level** *value*|*all***]** *target* **[***propertyname***]**

Options

[-d|-display] [-l|level] [-o|output]

Targets and Properties

TABLE 12-6 Targets and Properties for `show` Command

Valid Targets	Properties
/SYS	
/SP	
/SP/alertmgmt/rules/ *rulename* (*rulename* = 1 through 15)	community | username destination destination_port event_class_filter event_type_filter level snmp_version type
/SP/clients/ activedirectory	state certfilestatus defaultrole getcertfile address logdetail port strictcertmode timeout
/SP/clients/ activedirectory/ admingroups/*n* where *n* is 1-5	name
/SP/clients/ activedirectory/ alternateservers/*n* where *n* is 1-5	address port
/SP/clients/ activedirectory/ alternateservers/*n***/cert** where *n* is 1-5	clear_action issuer load_uri serial_number subject valid_from valid_until version

TABLE 12-6 Targets and Properties for `show` Command *(Continued)*

Valid Targets	Properties
/SP/clients/ activedirectory/cert	certstatus clear_action issuer load_uri serial_number subject valid_from valid_until version
/SP/clients/ activedirectory/ customgroups/*n* where *n* is 1-5	name roles
/SP/clients/ activedirectory/ opergroups/*n* where *n* is 1-5	name
/SP/clients/ activedirectory/ userdomains/*n* where *n* is 1-5	domain
/SP/clients/dns	auto_dns nameserver searchpath
/SP/clients/ldap	binddn bindpw defaultrole address port searchbase state
/SP/clients/ldapssl	defaultrole address logdetail port state strictcertmode timeout

TABLE 12-6 Targets and Properties for `show` Command *(Continued)*

Valid Targets	Properties
/SP/clients/ ldapssl/ admingroups/*n* where *n* is 1-5	name
/SP/clients/ ldapssl/ alternateservers/*n* where *n* is 1-5	address port
/SP/clients/ ldapssl/ alternateservers/*n***/cert** where *n* is 1-5	cert_status clear_action issuer load_uri serial_number subject valid_from valid_until version
/SP/clients/ldapssl/cert	certstatus clear_action issuer load_uri serial_number subject valid_from valid_until version
/SP/clients/ ldapssl/ customgroups/*n* where *n* is 1-5	name roles
/SP/clients/ ldapssl/ opergroups/*n* where *n* is 1-5	name
/SP/clients/ ldapssl/ userdomains/*n* where *n* is 1-5	domain
/SP/clients/ntp/server/[1|2]	address

TABLE 12-6 Targets and Properties for `show` Command *(Continued)*

Valid Targets	Properties
/SP/clients/radius	address port secret state
/SP/clients/smtp	port state
/SP/clock	datetime usentpserver timezone
/SP/config	dump_uri load_uri passphrase
/SP/console	escapechars
/SP/diag/snapshot	dataset dump_uri result
/SP/firmware	load_uri
/SP/logs/event	clear
/SP/network	commitpending dhcp_server_ip ipaddress ipdiscovery ipgateway ipnetmask macaddress pendingipaddress pendingdiscovery pendingipgateway pendingipnetmask state
/SP/powermgmt	actual_power permitted_power available_power
/SP/serial/external	flowcontrol speed

TABLE 12-6 Targets and Properties for `show` Command *(Continued)*

Valid Targets	Properties
/SP/serial/host	commitpending pendingspeed speed
/SP/services/http	port secureredirect servicestate
/SP/services/https	cert_status servicestate
/SP/services/https/ssl	cert_status
/SP/services/https/ssl/default_cert	issued_by issuer serial_number subject valid_from valid_until version
/SP/services/https/ssl/custom_cert	clear_action issuer load_uri serial_number subject valid_from valid_until version
/SP/services/https/ssl/custom_key	key_present load_uri clear_action
/SP/services/ipmi	servicestate
/SP/services/kvms	mousemode servicestate
/SP/services/servicetag	passphrase product_urn state

TABLE 12-6 Targets and Properties for `show` Command *(Continued)*

Valid Targets	Properties
/SP/services/snmp	engineid port sets v1 v2c v3 servicestate
/SP/services/snmp/communities/private	permissions
/SP/services/snmp/communities/public	permissions
/SP/services/snmp/users/*username*	password role
/SP/services/ssh	state
/SP/services/ssh/keys/dsa	fingerprint length privatekey publickey
/SP/services/ssh/keys/rsa	fingerprint length privatekey publickey
/SP/services/sso	state
/SP/sessions/*sessionid*	username starttime type mode
/SP/users/*username*	role password

TABLE 12-6 Targets and Properties for `show` Command *(Continued)*

Valid Targets	Properties
/SP/users/*username***/ssh/keys/1**	fingerprint algorithm load_uri clear_action embedded_comment bit_length
/SP/users/*username***/service**	service_password service_password_expires
/SP/users/*username***/escalation**	escalation_password escalation_password_expires

Examples

```
-> show /SP/users/user1
-> show /SP/clients -level2
-> show components
```

`start` Command

Use the `start` command to turn on the target or to initiate a connection to the host console. Using the `-script` option eliminates the prompt for a yes or no confirmation and the command acts as if yes were specified.

Syntax

start [*options***]** *target*

Options

[-h|help] [-script]

Targets

TABLE 12-7 Targets for `start` Command

Valid Targets	Description
/SYS or **/CH**	Starts (powers on) the system or chassis.
/SP/console	Starts an interactive session to the console stream.

Examples

```
-> start /SP/console

-> start /SYS
```

`stop` Command

Use the `stop` command to shut down the target or to terminate another user's connection to the host console. You will be prompted to confirm a `stop` command. Eliminate this prompt by using the `-script` option. The `-f|force` option specifies that the action will be performed immediately.

Syntax

stop [*options***] [-script]** *target*

Options

[-f|force] [-h|help]

Targets

TABLE 12-8 Targets for `stop` Command

Valid Targets	Description
/SYS or **/CH**	Perform an orderly shutdown, followed by a power off of the specified system or chassis. Use the `-f|-force` option to skip the orderly shutdown and force an immediate power off.
/SP/console	Terminate another user's connection to the host console.

Examples

```
-> stop /SP/console
-> stop -force /SYS
```

`version` Command

Use the `version` command to display ILOM version information.

Syntax

`version`

Options

`[-h|help]`

Example

```
-> version
version SP firmware version: 3.0.0
SP firmware build number: 4415
SP firmware date: Mon Mar 28 10:39:46 EST 2008
SP filesystem version: 0.1.9
```

APPENDIX **B**

Storage Redirection Command-Line Modes, Syntax, and Usage

The Storage Redirection CLI supports both an interactive and non-interactive mode for entering commands. The interactive mode is useful when you need to enter a series of Storage Redirection commands. The non-interactive mode is useful when you need to run a batch procedure or script. The syntax required for entering the Storage Redirection commands in either of these modes is as follows.

- **Interactive shell mode syntax**

  `<storageredir>` *<command>* *<command options>* *<sub-commands>* *<sub-command options>*

  To launch the Storage Redirection CLI and execute the commands directly from an interactive shell, you must first navigate to the location where the Storage Redirection Client was installed and launch the Storage Redirection CLI by issuing the `java -jar StorageRedir.jar` command. For instructions, see "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.

- **Non-interactive shell mode syntax**

  `$ java -jar StorageRedir.jar` *<command>* *<command options>* *<sub-commands>* *<sub-command options>*

  To launch the Storage Redirection CLI and execute the commands directly from a non-interactive shell, you must enter the Storage Redirection command (`java -jar StorageRedir.jar`) at the shell prompt (`$`) followed by the commands you want to execute. For instructions, see, "Launch Storage Redirection CLI Using a Command Window or Terminal" on page 126.

Supported Storage Redirection Commands and Options

The following tables describe the supported commands and options you can issue in the Storage Redirection CLI.

- TABLE 12-9 Storage Redirection Command
- TABLE 12-10 Storage Redirection Command Options
- TABLE 12-11 Storage Redirection Sub-Commands
- TABLE 12-12 Storage Redirection Sub-Command Options

TABLE 12-9 Storage Redirection Command

Command Name	Description
`java -jar StorageRedir.jar`	The `java -jar` command is used to launch the Storage Redirection client (`StorageRedir.jar`) from a command window or terminal.
`storageredir`	The `storagedir` command performs all storage redirection operations.

TABLE 12-10 Storage Redirection Command Options

Option Name	Description
`-h`	The `-h` command option displays the command-line Help information.
`-v`	The `-v` command option displays the Java command version information.

TABLE 12-11 Storage Redirection Sub-Commands

Sub-Command Name	Description
`list`	The `list` sub-command provides a list of the currently active storage redirections on one or all remote SPs. **Syntax usage example:** `storageredir` **`list`** `[-p storageredir_port] [remote_SP]`
`start`	The `start` sub-command invokes the specified redirection between the local host and the remote host server. If the authentication password is not provided, the system will prompt for it. **Syntax usage example:** `storageredir` **`start`** `-r redir_type -t redir_type_path -u remote_username [-s remote_user_password] [-p storageredir_port] remote_SP` **Note -** You must specify a valid Admin or Console role account in ILOM to start the redirection of storage device on a remote server.
`stop`	The `stop` sub-command stops the specified redirection between the local host and the remote host server. If the authentication password is not provided, the system will prompt for it. **Syntax usage example:** `storageredir` **`stop`** `-r redir_type -u remote_username [-s remote_user_password] [-p storageredir_port] remote_SP` **Note -** You must specify a valid Admin or Console role account in ILOM to stop the redirection of storage device on a remote server.
`test-service`	The `test-service` sub-command verifies whether the storage redirection service connection is active on the local host. **Syntax usage example:** `storageredir` **`test-service`** `[-p storageredir_port]`
`stop-service`	The `stop-service` sub-command stops the storage redirection service connection to the remote host server. **Syntax usage example:** `storageredir` **`stop-service`** `[-p storageredir_port]`

TABLE 12-12 Storage Redirection Sub-Command Options

Sub-Command Option Name	Description
`-r` *redir_type*	The `-r` *redir_type* identifies the type of storage media being redirected. Valid device values for *redir_type* include: • CD-ROM device Syntax: `-r cdrom` • CD-ROM image: Syntax: `-r cdrom_img` • Floppy device: Syntax: `-r floppy` • Floppy image: Syntax: `-r floppy_img`
`-t` *redir_type_path*	The `-t` *redir_type_path* identifies the full path to where the storage redirection media is stored or mounted. Example: `-t /home/username/JRC_Test_Images/CDROM.iso`
`-u` *remote_username*	The `-u` *remote_username* identifies the user name required to log in to the ILOM SP. Example: `-u` *john_smith* **Note -** Any valid user account in ILOM can install or launch the Storage Redirection service or client on their local system. However, a valid Admin or Console role account in ILOM is required to start or stop the redirection of a storage device on a remote server.
`-s` *remote_user_password*	The `-s` *remote_user_password* identifies the password required to log in to the ILOM SP. If this password command is not specified at the command line, the system will automatically prompt you for it.
`-p` *storageredir_port*	The `-p` *storageredir_port* identifies the storage redirection communication port on the local host. The default port provided is 2121. Example: `-p 2121`

Index

Symbols

/SYS, 3

A

Active Directory
  certstatus, 48
  removing certificate, 49
  strictcertmode, 47
  troubleshooting, 55
  viewing and configuring settings, 49
alert rules
  CLI commands, 92
  configuring, 90
  disabling, 91
alert tests
  generating, 92
alerts
  CLI commands for managing alerts, 92
  email notification
    configuring the SMTP client, 94
  generating email notification, 94

B

back up ILOM configuration
  prerequisites for, 104
  procedure for, 104
  roles required, 104
  time required, 105
Backup operation
  CLI command, 104
backup XML file
  editing, adding a user account, 109
  editing, example of, 108
  editing, passwords, 109
  editing, roles, 109
  example contents, 107
  prerequisites for editing, 107

C

certificate authentication, 47
certificate state, 48
CLI command syntax
  `cd` command, 141
  `create` command, 142
  `delete` command, 143
  `dump` command, 143
  `exit` command, 144
  `help` command, 144
  `load` command, 145
  `reset` command, 146
  `set` command, 147
  `show` command, 153
  `start` command, 161
  `stop` command, 162
  `version` command, 163
CLI command types
  alert management commands, 10
  clock settings commands, 11
  general commands, 9
  host system commands, 12
  network and serial port commands, 10
  SNMP commands, 12
  system management access commands, 11
  user commands, 9
CLI commands

executing combined, 14
executing individually, 14
reference for, 141
CLI target types
/CH, 3
/CMM, 3
/HOST, 3
/SP, 3
/SYS, 3
clock settings, 81
command properties, 6
for ILOM 2.x, 7
for ILOM 3.0, 7
command strings, 9
command-line interface (CLI)
command syntax, 8
filtering output options for commands, 13
overview, 2
prerequisites for using, 15
target tree, 6
using hierarchical architecture, 3
communication settings
configuring, 23
prerequisites for configuration, 25
component information, 74
components
enabling and disabling, 76
managing, 74
monitoring, 77
removing, 75
returning to service, 76

D

default settings
reset options, 110
`default`user account
using for password recovery, 20
diagnosing SPARC systems, 136
diagnosing x64 systems, 133
Distributed Management Task Force Command-Line Protocol (DMTF CLP), 2
documentation, xviii
Domain Name Service (DNS)
configuring, 29
locator service, 55
targets, properties, and values for, 29
DSA key
viewing, 34

E

event logs
contents of, 84
filtering output, 82
viewing and clearing, 83

F

fault management
viewing faulted components, 86
firmware
prerequisites for updating, 112
recovery during update, 116
troubleshoot update session, 116
update prerequisites, 113
updating image, 114

H

host name
assigning, 25
HTTP or HTTPS settings
enabling, 31
targets, properties, and values for, 32

I

ILOM 2.x
properties compared to ILOM 3.0, 7
updating 2.x scripts, 7
ILOM configuration
backing up, 103
resetting, 110
restoring, 103, 105
IP address assignment
editing using the CLI, 27 to 28

J

Java runtime environment
downloading, 120
Jnlpgenerator, 121

L

LDAP server
configuring, 56
LDAP/SSL, 58
certstatus, 59
removing a certificate, 60

strictcertmode, 59
troubleshooting, 66
viewing and configuring settings, 61
Lightweight Directory Access Protocol (LDAP), 56
configuring, 57
overview, 56
log in
first time, 19
prerequisites for, 18
regular user, 19
using `root` user account, 19
log out, 21

N

namespaces
accessed by SP, 3
network port 2121
default storage redirection port, 131
network settings, 24
DNS, 29
editing IP address, 27
host name, 25
pending and active properties, 25
serial port, 30
system identifier, 25
targets, properties, and values for, 27
viewing and configuring, 26
non-maskable interrupt (NMI), 134

P

passphrase
used to backup ILOM configuration, 104
used to restore ILOM configuration, 106
password
changing, 40
lost password recovery, 20
Pc-Check diagnostic tests, 133
physical presence
proving, 20
power consumption
monitoring, 97
monitoring actual power, 100
monitoring available power, 101
monitoring individual power supply, 100
monitoring permitted power, 101
monitoring total system power, 99
terminology, 98
power consumption management
monitoring power
`show` command, 101
power policy
configuring, 102
power state commands, 132
power-on self-test
diagnostic trigger for, 137
prerequisites for using CLI, 15
product identity information, xx
properties
ILOM 3.0 versus ILOM 2.x, 7

R

RADIUS
commands, 69
configuration prerequisites, 67
configuring, 67
configuring settings, 68
server default port, 69
recover lost password, 20
redirecting storage media
prerequisites for, 125
tasks required, 125
remote host
managing, 119
power state commands, 132
redirecting storage devices, 125
starting redirection of storage device, 129
stopping redirection of storage device, 130
storage redirection, 120
changing default network port, 131
Storage Redirection CLI, 125
remote power control
CLI commands, 132
remote syslog receiver, 85
requirements for using CLI, 15
resetting ILOM, 117
Restore operation
CLI command, 106
passphrase requirements, 106
sensitive data requirements, 104
sessions momentarily suspended, 106
time required, 106
user roles required, 105
restoring ILOM configuration, 103

root user account, 19
RSA key
  viewing, 34

S

Secure Shell (SSH)
  enabling or disabling, 33
  establishing remote connection, 33
  generating new key, 35
  settings for, 33
  using to log in, 19
  viewing current key, 34
sensor readings, 79
serial port settings
  pending and active properties, 30
  targets, properties, and values for, 31
  viewing and configuring, 30
service processor
  resetting, 117
Service Snapshot utility, 87
show faulty command, 86
sign-in authentication
  required for Storage Redirection CLI, 121
Single Sign On, 39
SMTP client
  configuring, 94
SNMP Trap alert, 90
SP reset, 117
SPARC diagnostics
  levels of, 137
  mode for, 136
  trigger for POST, 137
  verbosity of output, 138
ssh command (Solaris)
  connecting to a SP, 33
SSH connection, 33
  enabling and disabling, 33
  key encryption using the CLI, 34
  new key, 35
  restarting, 36
SSH key, 45
  adding, 45
  deleting, 46
Storage Redirection CLI
  default communication port, 121
  displaying command-line help, 128
  initial setup, 120
  installing client, 124
  launching, 126
  modes for, 165
  sign-in authentication, 121
  start service, 121
  starting device redirection, 129
  starting service, 121
  supported commands and options, 166
  supported ILOM versions, 120
  verify service status, 127
  verifying service status, 127
  viewing active redirections, 130
strictcertmode, 47
system alerts
  commands for managing, 92
  configuration prerequisites, 90
  configuring, 90
  configuring SMTP client, 94
  deleting, 91
  generating, 92
system components
  viewing and managing, 74
system identifier
  assigning, 25
system indicators
  viewing, 80
system problems
  diagnosing, 87

T

target tree, 6
troubleshooting, 87
typographic conventions, xxii

U

user accounts
  adding, 39
  configuring, 39
  deleting, 41
  password, 40
  roles, 41
  setting up, 19
  viewing individual session, 44
  viewing individual user account, 42
  viewing list of user sessions, 43

V

version information for ILOM
viewing, 113

X

x64 systems diagnostics
Pc-Check diagnostic tests, 133